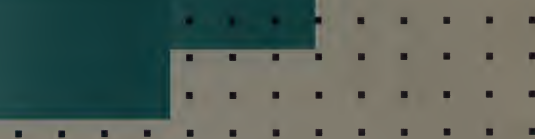
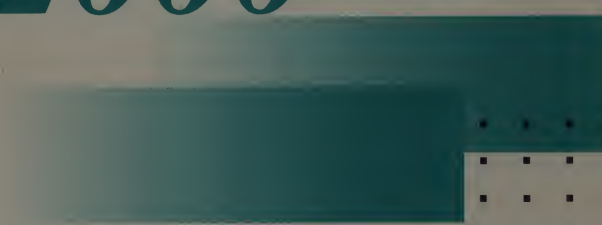



# VXT 2000 Windowing Terminal

digital

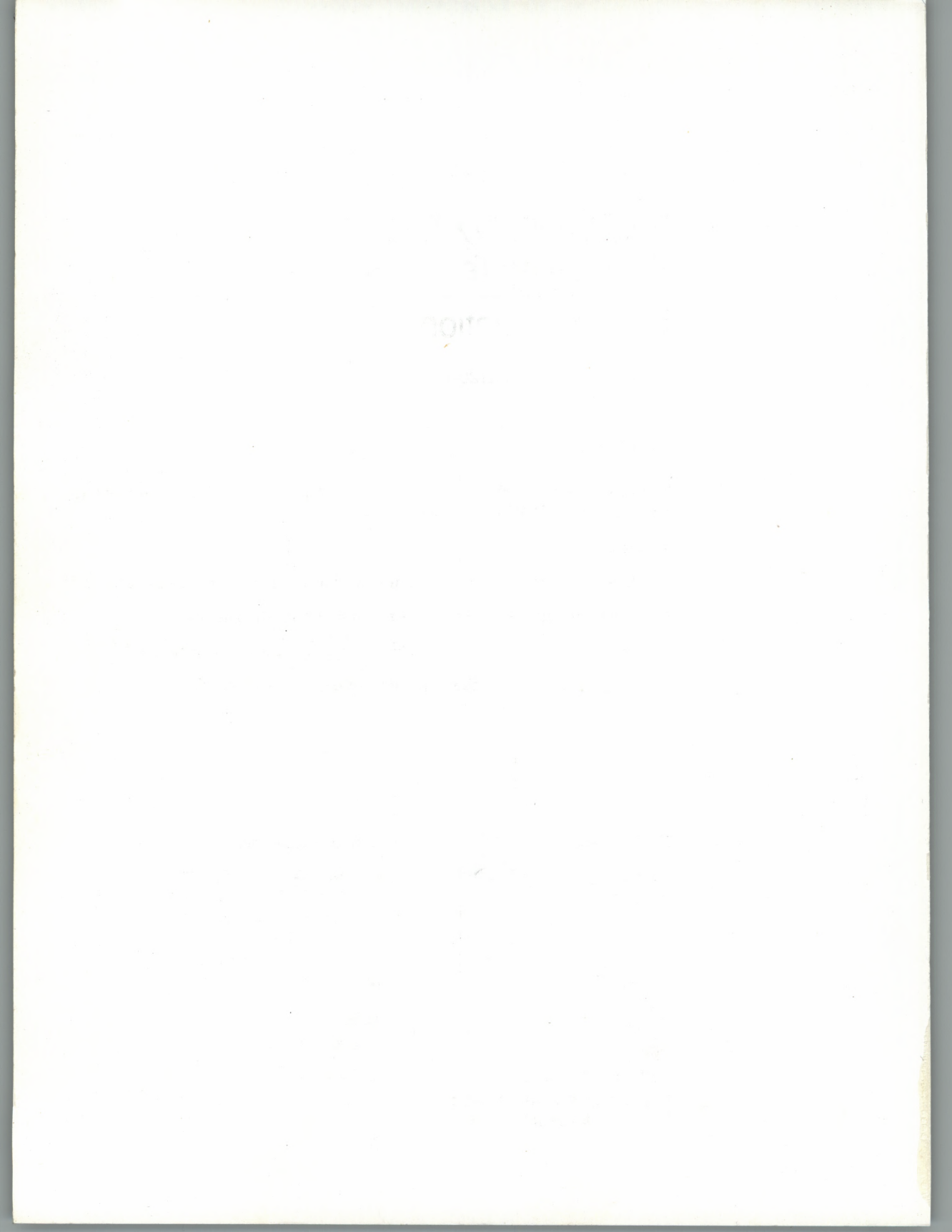
User Information

*VXT 2000*  
*VXT 2000*  
***VXT 2000***



*VXT 2000*

*VXT*





# VXT 2000+/VXT 2000 Windowing Terminal

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## User Information

Order Number: EK-VXT20-UG. D01

**August 1993**

This document describes how to use the VXT 2000+/VXT 2000 windowing terminal with VXT Version 2.0 software.

Topics include

- Creating X window and terminal window sessions on a host system
- Customizing the terminal's screens and operating features
- Using VXT software or VXT EX (essential X server) software
- Programming with the X windows image extension (XIE)

### **Revision/Update Information**

This is a revised document.

### **Operating System & Version:**

InfoServer Version 2.2, 3.0  
OpenVMS VAX Version 5.4-2  
OpenVMS AXP Version 1.5  
ULTRIX Version 4.2  
DEC OSF/1 AXP Version 1.2  
SunOS Version 4.1.2  
HP-UX Version 8.05  
IBM AIX Version 3.1  
SCO ODT Version 3.2.2

**Software Version:**  
**Digital Equipment Corporation**  
**Maynard, Massachusetts**

VXT Version 2.0

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**First Edition, January 1992**  
**Fourth Edition, August 1993**

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# Contents

<b>About This Guide</b> .....	xi
-------------------------------	----

## **1 A Look at the Terminal**

1.1	Terminal Highlights .....	1
1.2	How the Terminal Works .....	3
1.3	VXT Software .....	3
1.4	VXT EX Software .....	4
1.5	Memory Requirements .....	5
1.5.1	Monitoring Memory Use (Host-Based Terminals) .....	6
1.6	X Window Sessions and Terminal Window Sessions .....	6
1.7	Customizing Your Terminal .....	7
1.8	Compatibility with VT Series and 3270 Terminals .....	9
1.8.1	Character Sets .....	9

## **2 Using Windows**

2.1	Using the Mouse .....	10
2.1.1	Pointer Shapes .....	12
2.2	Working with Windows .....	12
2.2.1	What Are Windows? .....	12
2.2.2	Selecting the Active Window .....	14
2.2.3	Moving Windows .....	14
2.2.4	Changing the Size of Windows .....	15
2.2.5	Reducing Windows to Icons .....	16
2.2.6	Raising and Lowering Stacked Windows .....	17
2.3	The Window Menu .....	17
2.3.1	Using the Workspace Submenu .....	19
2.4	Working With Menus .....	21
2.4.1	Choosing Items from Pull-Down Menus .....	21
2.4.2	Choosing Items from Pop-Up Menus .....	22
2.4.3	Choosing Items from Options Menus in Dialog Boxes .....	23
2.5	Supplying Information in Dialog Boxes .....	23

2.5.1	Dimmed Items in Menus and Dialog Boxes .....	25
2.5.2	Moving and Changing Settings in a Dialog Box .....	25
2.6	Using Scroll Bars .....	26

### 3 Using the Terminal

3.1	Terminal Manager Window .....	29
3.1.1	VXT Message Box .....	30
3.1.2	Closing the Terminal Manager Window and VXT Message Box .....	30
3.2	Creating Sessions and VXT Applications .....	31
3.2.1	Displaying the Create Dialog Box .....	31
3.2.2	Starting LAT or Serial Sessions .....	32
3.2.3	Starting a DECnet Session .....	33
3.2.4	Starting an IP Session .....	34
3.2.4.1	Optional Buttons for Specifying IP Hosts .....	35
3.2.5	Starting VXT Applications .....	38
3.2.6	Preferred Services .....	38
3.2.7	Creating Sessions from a Menu: Preferred Services .....	39
3.3	Autostarting, Pausing, or Ending Sessions .....	40
3.3.1	Autostarting a Session .....	41
3.3.2	Pausing a Session .....	41
3.3.3	Ending All Sessions and Restarting VXT Software .....	43
3.3.4	Ending Individual Sessions .....	44
3.4	Checking Network and Terminal Status .....	44
3.5	Working with Multiple Remote X Session Managers .....	44
3.6	Customizing Your Terminal's Environment .....	45
3.7	Printing .....	45
3.7.1	Printing the Screen .....	46
3.7.2	Printing from a Host System .....	48
3.8	Getting Started Menu .....	49

### 4 Using VXT DECterm Windows

4.1	The VXT DECterm Window .....	52
4.2	Copying and Pasting Text .....	54
4.2.1	Host Synchronization Required .....	54
4.2.2	Selecting Text to Copy .....	55
4.2.3	Pasting Text .....	55
4.2.4	Using Quick Copy .....	56
4.2.5	Extending Your Selected Text .....	56
4.3	Clearing or Resetting the Window .....	57
4.4	Using Options .....	59



4.5	Printing the DECterm Window .....	59
4.6	Exiting from a VXT DECterm Window .....	61

## 5 Customizing Windows

5.1	Displaying the Options Submenu .....	63
5.2	Saving and Restoring Window Option Settings .....	64
5.3	Changing Your Workspace Settings .....	65
5.4	Changing Your Border Settings .....	67
5.5	Changing Your Border Color Settings .....	69
5.6	Changing Your Icon Settings .....	70
5.7	Changing Your Icon Color Settings .....	72
5.8	Changing Your Matte Settings .....	74
5.9	Changing Menu, Button, and Key Bindings .....	75
5.10	Launching Sessions and VXT Applications .....	80

## 6 Customizing the Terminal

6.1	Displaying the Customize Menu .....	84
6.2	Saving and Restoring Terminal Manager Settings .....	85
6.3	Changing Your Keyboard Settings .....	85
6.4	Choosing the Display Language .....	88
6.5	Changing Your Pointer and Mouse Settings .....	89
6.6	Changing Your Print Screen Settings .....	91
6.7	Changing Your Security Settings .....	93
6.8	Changing Your Screen Background .....	96
6.9	Changing Your Window Colors .....	98
6.10	Changing Your Terminal Manager Settings .....	100
6.11	Specifying Your AutoStart Settings .....	103
6.12	Changing Your Video Alignment Settings (VX227 Models) .....	106
6.13	Saving the Terminal Manager Window's Position and Size .....	107
6.14	Customizing the VXT Message Box .....	107
6.14.1	Saving the VXT Message Box's Position and Size .....	109

## 7 Customizing Your System

7.1	Displaying the Customize Menu .....	111
7.2	Changing System and Printer Communication Settings .....	112
7.2.1	Changing Your Serial and Parallel Port Settings .....	113
7.2.2	Changing Your LAT Settings .....	116
7.2.3	Changing Your LASTport Group Code Settings (InfoServer Systems) .....	118
7.2.4	Changing Your TCP/IP IP Address Settings .....	120

7.2.5	Changing Your TCP/IP Name Server Settings .....	121
7.2.6	Changing Your TCP/IP Routing Table Settings .....	123
7.2.7	Changing Your DECnet Address Settings .....	125
7.2.8	Changing Your DECnet Name Translator Settings .....	127
7.3	Changing Your Configuration Manager Settings .....	128
7.4	Changing Your Font Path Settings .....	129
7.5	Changing Your X Server Settings .....	133
7.6	Changing Your Boot Settings for VXT Software .....	135
7.6.1	Overview .....	136
7.6.2	Using Host-Based Operation .....	137
7.6.3	Using Server-Based Operation .....	138
7.6.4	Customize Boot Dialog Box Description .....	141
7.6.5	Entering Boot Commands to Load VXT Software .....	144

## 8 Customizing VXT DECterm Windows

8.1	Displaying the Options Menu .....	148
8.2	Saving and Restoring VXT DECterm Option Settings .....	149
8.3	Changing Your Window Settings .....	151
8.3.1	Using Fonts on Your Host System or InfoServer .....	155
8.4	Changing Your Display Settings .....	157
8.5	Changing Your General Operating Features .....	159
8.6	Changing Your Keyboard Features .....	163
8.7	Choosing National Replacement Character Sets .....	165
8.8	Changing Your Graphics Display Settings .....	166
8.9	Changing Your Printer Settings .....	167

## 9 Using VXT 3270 Windows

9.1	VXT 3270 Windows .....	170
9.2	Before You Start .....	171
9.3	Creating a VXT 3270 Session .....	171
9.4	Entering 3270 TE Connection Parameters .....	172
9.5	Using the VXT 3270 Window .....	175
9.5.1	Using the VXT 3270 Window Work Area .....	176
9.5.2	Working in the Display Area .....	177
9.5.3	Understanding Operator Information .....	178
9.5.4	Entering Data .....	178
9.5.5	Editing Data .....	179
9.5.6	Printing Text .....	180
9.5.7	Copying and Pasting Text .....	180
9.5.8	Selecting Text to Copy .....	180
9.5.9	Pasting Text .....	181

9.5.10	Using Quick Copy .....	181
9.5.11	Extending Your Selected Text .....	182
9.5.12	Copying and Pasting With the Keyboard Only .....	182
9.5.13	Recording and Playing Back Key Sequences .....	183
9.5.14	Using the Numeric Keypad to Enter Numbers .....	184
9.5.15	Saving Current Settings .....	185
9.5.16	Viewing Settings .....	185
9.5.17	Viewing Keyboard Layout Maps .....	185
9.5.18	Viewing the Function List .....	186
9.5.19	Viewing Your Connection Parameters .....	186
9.5.20	Viewing Field Attributes .....	186
9.5.21	Using the MB3 Pop-Up Menu .....	187
9.5.22	Exiting from a VXT 3270 Window .....	188
9.6	Customizing the VXT 3270 Window .....	188
9.6.1	Customizing Key Definitions .....	188
9.6.2	Saving and Loading Custom Key Definitions .....	190
9.6.3	Modifying VXT 3270 Window Options .....	191
9.6.4	Using the Selector Mouse Function .....	192
9.7	Using VXT 3270 Keyboard Functions .....	192
9.7.1	Key Functions Defined .....	195
9.8	Translation Table .....	201

## 10 Checking the Terminal's Status

10.1	Displaying the Status Submenu .....	203
10.2	Checking a TCP/IP Host System .....	203
10.3	TCP/IP Routes Dialog Box .....	205
10.4	Displaying LAT and Ethernet Counters .....	206
10.5	Monitoring the Terminal's Memory and Network Use .....	211
10.6	Checking the Terminal's System Configuration .....	212

## 11 Using VXT EX Software

11.1	VXT EX Software .....	216
11.2	Loading VXT EX Software .....	217
11.3	Creating a Session .....	217
11.4	VXT EX Options Dialog Box .....	219



## 12 Using Your Keyboard

12.1	ANSI Keyboard	221
12.1.1	Keyboard Dialect	221
12.1.2	Layout	222
12.1.3	Main Keypad	222
12.1.4	Editing Keypad	224
12.1.5	Numeric Keypad	225
12.1.6	Top-Row Function Keys	225
12.1.7	Data Processing Keys	227
12.1.8	Compose Characters	227
12.1.9	Text-Editing Functions	228
12.1.10	Indicator Lights	228
12.1.11	Audible Indicators	228
12.1.12	Keyclick	229
12.1.13	Bell	229
12.2	Short ANSI Keyboard	229
12.2.1	Main Keypad	230
12.2.2	Using <b>Extend</b> Key Sequences for Keypad and Function Keys	230
12.2.3	Arrow Keys	232
12.2.4	Top-Row Function Keys	232
12.2.5	Compose Characters	233
12.2.6	Indicator Lights	234
12.2.7	Audible Indicators	234
12.3	The PC Keyboard	234
12.3.1	PC Keyboard Models—Setting the Keyboard Type	234
12.3.2	Using the ANSI Keyboard Layout	234
12.3.3	Layout	235
12.3.4	Main Keypad	235
12.3.5	Janus-Faced and Front-Faced Character Keys	237
12.3.6	Editing Keypad	237
12.3.7	Numeric Keypad	238
12.3.8	Audible Indicators	238
12.3.9	Keyclick	238
12.3.10	Bell	238
12.3.11	Redefining Keys	239
12.3.12	PC Keyboard Keycodes and Symbol Assignments	240
12.4	Using the Keyboard Instead of the Mouse	244
12.4.1	Using the Editing Keypad to Perform Mouse Functions	244
12.4.2	Using Menu Bars and Pull-Down Menus	244
12.4.3	Using Pop-Up Menus	245
12.4.4	Using Submenus	245



12.4.5	Navigating Windows .....	246
12.4.6	Miscellaneous .....	246
12.4.7	Using Dialog Boxes .....	247
12.5	Typing Additional Characters .....	248
12.5.1	What Characters Can I Type? .....	249
12.5.2	Key Sequences with Nonspacing Diacritical Keys .....	249
12.5.3	How to Type a Character Using the Compose Character Key .....	250
12.5.4	How to Type a Character Using the Group Shift Key .....	251
12.5.5	Invalid Sequences .....	251
12.5.6	Canceling or Restarting a Key Sequence .....	252
12.5.7	Hexadecimal Key Sequences .....	252

## **A Solving Problems and Getting Service**

A.1	Operating Problems .....	259
A.2	Power-Up Self-Test .....	265
A.2.1	Error Messages .....	265
A.3	Restoring the Terminal to Factory-Default Settings .....	266
A.4	Digital Service Overview .....	267
A.4.1	How to Get Service .....	267

## **B Color Mixing**

B.1	What Color Settings Can I Customize? .....	269
B.2	Color Mixing Dialog Box .....	270
B.2.1	Picker Color Model .....	270
B.2.2	Hue, Lightness, Saturation (HLS) Color Model .....	273
B.2.3	Red, Green, Blue (RGB) Color Model .....	275
B.2.4	Browser Color Model .....	276
B.2.5	Grayscale .....	277

## **C Programming with the X Windows Image Extension**

C.1	Checking the Terminal's Imaging Capabilities .....	280
C.2	Hardware Accelerated XIE Functions .....	280
C.3	XIE Pipeline Definitions .....	280
C.3.1	XIE Pipeline Constraints .....	281
C.3.2	XIE Pipeline Examples .....	282

## **D Related Documentation**

D.1	Ordering Information . . . . .	285
-----	--------------------------------	-----

## **Glossary**

## **Index**

## **Tables**

5-1	Launching Applications—Names and Arguments . . . . .	81
5-2	Launching Applications—Examples . . . . .	81
9-1	Status Indicators . . . . .	178
9-2	Keyboard Copy and Paste Keys . . . . .	182
9-3	Field Attributes . . . . .	187
9-4	Quick Access to Functions: MB3 Pop-Up Menu . . . . .	187
9-5	VXT 3270 Window — Default Key Functions . . . . .	192
10-1	LAT Counters Display Fields . . . . .	206
10-2	Ethernet Counters Display Fields . . . . .	209
10-3	System Configuration Display Fields . . . . .	213
12-1	PC Keyboard Keycodes and Symbol Assignments . . . . .	240
12-2	Keyboards with Diacritical Marks . . . . .	250
12-3	Key Sequences for Additional Characters . . . . .	254
A-1	Operating Problems . . . . .	259



## About This Guide

This guide describes how to use VXT software on a VXT 2000 windowing terminal. The terminal makes use of the open windowing environment. The guide describes how to create X window or terminal window sessions on a wide variety of operating systems.

### Who Should Use This Guide

This guide is for the general user of the VXT 2000 windowing terminal.

- If you are new to windows or the Motif windows environment, the guide provides basic information on how to use windows and the mouse pointing device.
- If you are familiar with windows, you can use the guide to learn about VXT software features and customize your terminal's operating features.

### Organization

This guide contains the following chapters and appendices:

- Chapter 1, "A Look at the Terminal," provides an overview of the terminal and its features.
- Chapter 2, "Using Windows," describes how to manage windows and use menus, dialog boxes, and scroll boxes. The chapter also shows how to use the mouse.
- Chapter 3, "Using the Terminal," describes the basic features of the Terminal Manager window. The chapter describes how to create sessions, print the screen, and view online VXT 2000 documentation.
- Chapter 4, "Using VXT DECterm Windows," describes how to use DECterm windows, which emulate a VT300 series terminal.



- Chapter 5, “Customizing Windows,” describes how to check and control the settings for many of the window manager’s features. You can make changes to the settings and save them for all future sessions.
- Chapter 6, “Customizing the Terminal,” describes how to customize the terminal’s operating settings for your computing environment and personal preference.
- Chapter 7, “Customizing Your System,” describes how to customize advanced settings that affect communication, font paths, the terminal’s X server, and the version of VXT software used.
- Chapter 8, “Customizing VXT DECterm Windows,” describes how to customize your DECterm windows for your computing environment and personal preference.
- Chapter 9, “Using VXT 3270 Windows,” describes how to use the VXT 3270 terminal emulator to run applications on an IBM SNA host system through the DECnet/SNA gateway.
- Chapter 10, “Checking the Terminal’s Status,” describes how to use the Terminal Manager window’s Status menu to monitor memory use, network use, network counters, and the terminal’s system configuration. You can also view TCP/IP routes and use ping to determine the availability of hosts.
- Chapter 11, “Using VXT EX Software,” describes how to use VXT EX software. VXT EX software is a minimal version of VXT software without a terminal manager and other local clients.
- Chapter 12, “Using Your Keyboard,” describes the keys and indicator lights on the terminal’s ANSI, short ANSI (UNIX), and PC keyboards. It also describes how to type additional characters not listed on your keyboard keys.
- Appendix A, “Solving Problems and Getting Service,” describes how to solve typical operating problems and how to get service.
- Appendix B, “Color Mixing,” describes how to use the Color Mixing dialog box that lets you change the color of windows and the screen.
- Appendix C, “Programming with the X Windows Image Extension,” provides guidelines for programming with XIE protocol functions.
- Appendix D, “Related Documentation,” lists related documentation available from Digital.
- The glossary defines new terms introduced in the text and other relevant terms.

## Conventions

This guide uses the following conventions:

Convention	Meaning
VXT 2000 windowing terminal	Refers to all models of the VXT 2000 windowing terminal.
InfoServer system	Refers to a disk server that downloads a VXT system image to the terminal.
Mouse	Refers to any pointing device, such as a mouse, a puck, or a stylus.
MB1, MB2, and MB3	Represent the three mouse buttons: left (MB1), middle (MB2), and right (MB3). Lefthanded users can exchange the MB1 and MB3 button assignments if desired.
<code>key</code>	Keys or switches that are labeled appear in a <code>box</code> . Example: Press the <code>Return</code> key.
<code>Alt</code>	Represents the <code>Alt</code> or <code>Alt Function</code> key on your keyboard.
<code>Ctrl key key</code>	For <code>Ctrl</code> key sequences, press and hold each key in order until you complete the sequence.
<code>Ctrl</code> +left <code>Alt</code>	If a key sequence includes descriptive words, the keys are joined by a plus (+) symbol for clarity.
Caution	Provides information to prevent damage to equipment or software.
Note	Provides general information about the current topic.
Menu item . . .	Menu items followed by . . . display a dialog box when chosen.
Menu item ▸	Menu items followed by ▸ display a submenu when chosen.
Glossary entries	Appear in <b>bold</b> when first used in text.
Index entries	The following abbreviations are used in the index: (TM) for Terminal Manager (WM) for Window Manager

## Notes to the Reader

The screens and windows shown in this guide represent the latest information available at the time of publication. Some screens and windows may not exactly match those that appear on your terminal or reflect the system-default settings.





# 1

## A Look at the Terminal

This chapter provides an overview of the VXT 2000 windowing terminal and its basic operating features. The chapter tells you where to look in this guide for more information about each feature.

### 1.1 Terminal Highlights

The VXT 2000 windowing terminal lets you access X window applications and traditional terminal applications on computer systems in your network. You can open several windows on the terminal, to display multiple applications from different systems at the same time.

The VXT 2000 terminal provides many features of a workstation without the need for workstation management. Here are some of the terminal's main features:

#### **Hardware**

- A workstation-style display, a keyboard, and a mouse.
- A monochrome, gray scale, or color monitor.
- A choice of Ethernet network connectors: ThinWire, thickwire, or twisted pair.
- A 25-pin RS-232 serial printer/communications port with full modem control.
- A 25-pin parallel printer port.
- Serial interfaces for a keyboard and a mouse or tablet.
- Expandable memory (user installable).



## A Look at the Terminal

### 1.1 Terminal Highlights

#### Software

- The ability to access several computer systems at the same time, using the TCP/IP, LAT, or DECnet transports.
- **VXT software** or **VXT EX software**, downloaded from a host system or an InfoServer system.
- VXT software provides local applications and features such as
  - A local Terminal Manager window that lets you create and manage connections to computer systems. See Chapter 3.
  - VXT DECterm windows that let you access VT video terminal applications on computer systems. VXT DECterm windows emulate VT 300 series video terminals. See Chapter 4.
  - VXT 3270 windows that let you access applications on an IBM SNA system. See Chapter 7.
  - A local Motif window manager that lets you easily move and resize windows, using a mouse or keyboard for navigation. See Chapter 2.
  - An AutoStart feature to automatically start your selected computer sessions and local terminal applications when you start work, or at any other time. See Chapter 6.
  - A Customize Boot dialog box for choosing the VXT software version you want your terminal to load. See Chapter 6.
  - Configuration Manager windows that let a system manager configure individual terminals or groups of terminals to share customized settings and fonts. See *VXT Software Version 2.0 Installation and System Management*.
- VXT EX (essential X server) software is a clientless version of VXT software that lets you access X applications on computer systems with minimal memory installed in the terminal. When you use VXT EX software, the system you connect to must provide all window and session management features.



## 1.2 How the Terminal Works

The VXT software and fonts for your terminal are installed on a host computer system or an **InfoServer system**. An InfoServer system is a high-performance virtual disk server that can efficiently download software to many terminals.

You can use the terminal with one or more computer systems. You can connect the terminal to

- An Ethernet network, using the ThinWire, thickwire, or twisted-pair port
- A computer, using the serial port

The computer system you connect to is called the *host*. You can connect several terminals to a single host or connect one terminal to several hosts.

You use the keyboard, mouse and monitor to interact with applications on your system. You send data to the application by typing on the keyboard or selecting window options with the mouse. Data sent by the application appears as text or graphics on the terminal's screen. You can print text or graphics on a printer connected to the terminal's printer port or on any networked printer.

You can use a variety of host software applications on the terminal. For example, your host may have applications for word processing, data entry, programming, or business graphics. Most applications involve interactive processing. This means the terminal immediately sends the information you enter from the keyboard or mouse to the host.

## 1.3 VXT Software

Each time you start up the terminal, it sends out a network request for a host or InfoServer system to download VXT software and fonts to the terminal. This process of starting up the software and bringing it to an operable state is also known as **booting**.

Knowledgeable users can customize the terminal's boot settings to load a particular VXT software version. See Section 7.6 for details.

There are some differences between host-based and server-based operation.

### VXT Host-Based Software

If your terminal downloads VXT software from a host system, the terminal always uses its own physical memory to display applications and store your customized terminal settings. Host-based operation provides

- A Terminal Manager window
- VXT DECterm and VXT 3270 windows

## A Look at the Terminal

### 1.3 VXT Software

- A local Motif window manager
- A configuration manager—Your system manager can use the Configuration Manager dialog boxes to customize and manage individual terminals from a central terminal.

#### VXT Server-Based Software

If your terminal downloads VXT software from an InfoServer system, the terminal typically operates in server-based mode. In server-based mode, the terminal saves your customized terminal settings on an InfoServer system. Server-based mode provides all the features of the host-based operation, plus

- Virtual memory capability—The InfoServer system provides the terminal with additional memory as needed to display more applications. As a result, the terminal needs less installed memory than when you use host-based operation.
- More configuration manager features—Your system manager can use the Configuration Manager dialog boxes to customize and manage groups of terminals, as well as the fonts they use.
- InfoReader library—You can access this library of online VXT documentation from the Getting Started menu in the Terminal Manager window. The library includes this user guide.

You can also choose the host-based mode of operation when downloading from an InfoServer system. In this case, your customized settings are stored in the terminal's memory, and the terminal cannot use the InfoServer system for memory services. You still have access to the InfoReader library. Your boot settings determine the mode of operation. See Section 7.6.

### 1.4 VXT EX Software

VXT EX (essential X server) software is a clientless version of VXT software, which means it does not include any local applications such as the Terminal Manager window, VXT DECterm and VXT 3270 windows, or the Motif window manager.

VXT EX software lets you use a VXT 2000 windowing terminal as a workstation companion, relying on the host system to provide a session manager, window manager, and other applications. You can use VXT EX software with minimal memory installed in the terminal.

VXT EX software provides a single dialog box for starting an X session on a host system. You can start a session on a system that supports the LAT or TCP/IP transports and access that system's X window applications. See Chapter 11.

## 1.5 Memory Requirements

When you turn on the terminal, the VXT software is loaded into the terminal from an InfoServer system or from a host computer system. There are different memory requirements for using server-based or host-based software. The optional image accelerator board for some VXT 2000 models also requires extra memory.

If You Use VXT Software...	And...	Your Terminal Needs...
Server-based	–	4 megabytes of memory
Server-based	Image accelerator board	6 megabytes of memory
Host-based	–	10 megabytes of memory
Host-based	Image accelerator board	12 megabytes of memory

If You Use VXT EX Software...	And...	Your Terminal Needs...
Host- or server-based	–	4 megabytes of memory
Host- or server-based	Image accelerator board	6 megabytes of memory

The standard terminal comes with 4 megabytes of memory. You can expand memory up to 18 megabytes by installing memory modules in the terminal. On models that have a system box, you can also install a memory controller board; some terminals have a memory controller board already installed.

### Standard Terminal (4 MB)

- 4-megabyte system logic board  
or
- 2-megabyte system logic board and 2-megabyte memory controller board

### Optional Memory (To 18 MB)

- One to three 2-megabyte or 4-megabyte memory modules
- 2-megabyte memory controller board

To order and install memory, see your terminal's *Installation Information* guide.



## A Look at the Terminal

### 1.5 Memory Requirements

#### 1.5.1 Monitoring Memory Use (Host-Based Terminals)

If your terminal uses host-based VXT software, the number of applications and windows you can display is limited by the amount of physical memory in the terminal. The amount of memory in use changes as you open and close windows and applications. If you run out of memory, the terminal may quit all current X sessions and terminal window sessions and reboot itself.

When the amount of available memory is low, the Terminal Manager window displays a warning message. You can also monitor memory use by checking the System Monitor dialog box (Section 10.5).

To regain memory, you can

- Close or quit from any unused applications, windows, or sessions.
- Decrease the number of lines the terminal saves when you scroll them off the top of a VXT DECterm window. See Section 8.4.
- End all current sessions by rebooting the terminal's software. To reboot the terminal's software:
  - Choose Reset, Reboot, or Shutdown from the Terminal Manager window's Session menu.
  - Press the reboot key sequence for your keyboard:

ANSI (LK401) keyboard	Press <b>Ctrl</b> <b>Alt</b> <b>.</b> , using the left <b>Alt</b> key and the period key on the numeric keypad.
-----------------------	---

PC (LK443/LK444) keyboard	Press <b>Ctrl</b> <b>Alt</b> <b>.</b> , using the period key on the numeric keypad.
---------------------------	---

Short ANSI (LK421) keyboard	Press <b>Ctrl</b> <b>Alt</b> <b>Extend</b> <b>.</b> .
-----------------------------	---

To install more memory in the terminal, see your terminal's *Installation Information* guide.

## 1.6 X Window Sessions and Terminal Window Sessions

You can use two types of sessions on your host computers: an **X window session** or a **VXT terminal window session**. You can open X window sessions and VXT terminal window sessions at the same time.

### X Window and DECwindows Sessions

The X Window System is a graphically oriented user interface that lets you display one or more windows on the screen. Each window can represent a different **software application** running on its own host system. For example, you could run a word processing application in one window and a spreadsheet application in another window. With multiple windows, you can perform many tasks in an easy and efficient manner.

The X Window System was designed at the Massachusetts Institute of Technology. Digital's DECwindows Motif software is based on the X Window System and the Open Software Foundation's Motif standard.

To use an X window session, you log in to a host that has X window applications. In an X window session, you can use all the applications and utilities provided in the X Window System. For more information about Digital's X applications, see the *DECwindows Motif User's Guide* for your operating system.

### Terminal Window Sessions

You can create terminal windows to access video text terminal applications on host systems. The terminal lets you create multiple VXT DECterm or VXT 3270 terminal windows. When you open a terminal window, you log in to a host as you would on a conventional video terminal.

## 1.7 Customizing Your Terminal

You can check and control the settings of the terminal's operating features. You can recall your own settings or use factory-default settings from memory. You can change individual feature settings for the window manager, terminal manager, configuration manager, VXT DECterm windows, and VXT 3270 windows.

The terminal stores your customized settings in a **resource file**. Whenever you turn on or reset the terminal, it reads the settings in the resource file.

If you use host-based operation, the terminal stores the resource file in the terminal's nonvolatile memory. If you use server-based operation, the terminal stores the resource file on an InfoServer system. Groups of server-based terminals can share a resource file.

- **Terminal Manager Customize menu**

The Customize menu in the Terminal Manager window lets you view and change the settings for many of the terminal's operating features. Chapters 6 and 7 describes how to use the Terminal Manager's Customize menu.



## A Look at the Terminal

### 1.7 Customizing Your Terminal

- **Window manager menu**

When you click on the window menu button at the upper-left corner of any window border, the window manager displays the window menu. You can access an Options menu and Resource Configuration dialog box from the window menu. The Options menu lets you change many window management features. The Resource Configuration dialog box lets you configure the window manager. You can customize the window manager menus and the keyboard keys to iconify a window or start applications. See Section 5.9 and Section 5.10 to learn how to use and customize the window manager's Options menu and Resource Configuration dialog box.

- **VXT DECterm Options menu**

Each VXT DECterm terminal window you create includes an Options menu. This menu lets you change many DECterm operating features for that window while an application is running. In many cases, the application handles customization of the VXT DECterm window. Chapter 8 describes how to use the VXT DECterm Options menu.

- **VXT 3270 Options menu**

Each VXT 3270 terminal window you create includes an Options menu. This menu lets you change certain VXT 3270 operating features while an application is running. In many cases, the application handles customization of the VXT 3270 window. Section 9.6 describes how to use the VXT 3270 Options menu.

- **Configuration Manager**

When you click on Configuration . . . in the Terminal Manager window's Customize menu, the terminal displays the Configuration submenu. From the Configuration submenu you can display a Resource Management or Font Management dialog box.

The Resource Management dialog box lets a system manager centrally manage VXT 2000 windowing terminals from one terminal. The system manager can control the customizable features of these menus:

- Terminal Manager window's Customize menu
- Terminal Manager window's Create menu
- Window manager's Options menu
- VXT DECterm window's Options menu

The Font Management dialog box lets a system manager customize and configure font support for terminals on multiple InfoServer systems.

The *VXT Software Version 2.0 Installation and System Management* describes how to use the Resource and Font Management dialog boxes.

Host systems can also customize certain features of your terminal:

- **Host-based control functions**  
Applications can control many terminal features from the host system by using control functions.
- **Client Customize**  
The X window or DECwindows software package includes its own Customize utility, not described here. For more information, see the *DECwindows Motif User's Guide* for your operating system.

## **1.8 Compatibility with VT Series and 3270 Terminals**

The terminal can operate as a video text terminal when you want to log in to a host system as you would with a conventional video terminal. Chapter 4 describes VXT DECterm terminal windows and how to use them. Chapter 9 describes VXT 3270 terminal windows and how to use them.

### **1.8.1 Character Sets**

#### **VXT DECterm Windows**

When you use VXT DECterm terminal windows, you can choose different character sets to match your computer system or software application requirements. You can choose from

- Two 8-bit multinational character sets—DEC Multinational or the ISO Latin Alphabet No. 1 set of the International Standards Organization
- Several 7-bit national replacement character sets (NRCs) for Western European languages

Chapter 6 describes how to choose characters sets.

#### **VXT 3270 Windows**

VXT 3270 windows use a translation table to translate the characters generated by the terminal into EBCDIC characters that your IBM application uses. See Section 9.8.

## 2



## Using Windows

This chapter describes how to use windows, menus, dialog boxes, and window icons on your terminal.

The chapter covers the following major topics:

- Using the Mouse
- Working with Windows
- The Window Menu
- Choosing Items from Pull-Down Menus
- Supplying Information in Dialog Boxes
- Using Scroll Bars

### 2.1 Using the Mouse

When you work with windowing applications, you use your mouse to perform many operations—from making menu selections to manipulating windows on the screen. Your mouse lets you move quickly through windowing applications. When you roll the mouse across your mouse pad, you move the pointer on the screen. If you run out of space on the pad, you can pick up and move the mouse without moving the pointer.

The mouse has three buttons:

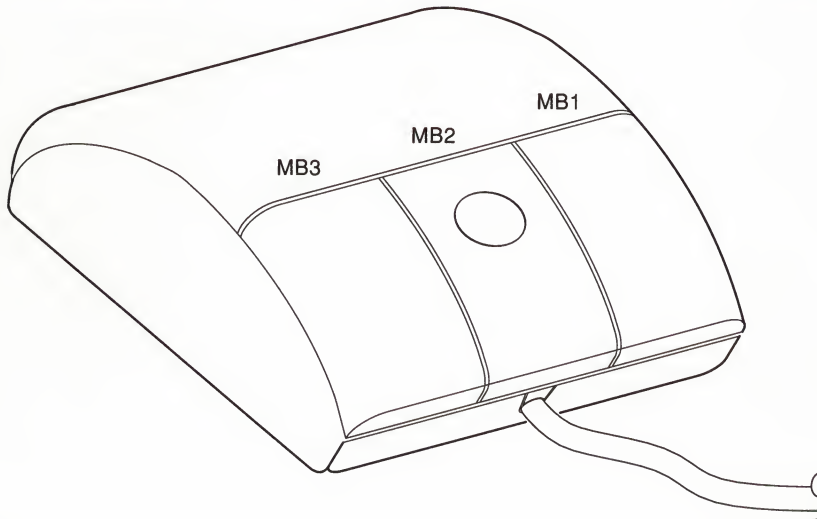
- MB1 (mouse button 1) on the left
- MB2 in the middle
- MB3 on the right



## Using Windows

### 2.1 Using the Mouse

This button arrangement normally suits right-handed users. If you are left-handed, you can reverse the position of MB1 and MB3 by changing the **Button Arrangement** setting in the Customize Pointer dialog box (Chapter 6).



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You can perform six basic actions with the mouse.

<b>Point</b>	Move the mouse across the mouse pad until the pointer is where you want the next action to occur.
<b>Click</b>	Quickly press and release MB1. You should hear and feel a faint click.
<b>Press</b>	Point to a menu name, scroll bar, or other action item that you want to perform. Without moving the mouse, press and hold MB1.
<b>Drag</b>	Point to an object, such as a window outline. Press and hold MB1 (or MB2), move the pointer to drag the object, then release MB1.
<b>Double click</b>	Point to an object and click MB1 twice in quick succession.
<b>Shift click</b>	Point to an object. Press and hold the <b>[Shift]</b> key and click MB1. Then release the <b>[Shift]</b> key.

You will get a chance to practice these movements when you open your first session.

#### Using the Keyboard Instead of the Mouse

If you prefer, you can use your keyboard to navigate through windows, display menus, and make selections from menus and dialog boxes. See Section 12.4 for a list of keyboard commands.

## Using Windows

### 2.1 Using the Mouse

#### 2.1.1 Pointer Shapes

Usually the pointer is an arrow, but you can choose a different shape. (See Section 6.5.) The pointer also changes shape when you perform certain actions, to reflect the type of action or state of the action. For example, the pointer may become an hourglass or a wristwatch to indicate a working action is in progress.



Pointing



Working



Moving

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## 2.2 Working with Windows

This section describes the basic techniques for manipulating windows:

- What Are Windows?
- Selecting the Active Window
- Moving Windows
- Changing the Size of Windows
- Reducing Windows to Icons
- Raising and Lowering Stacked Windows

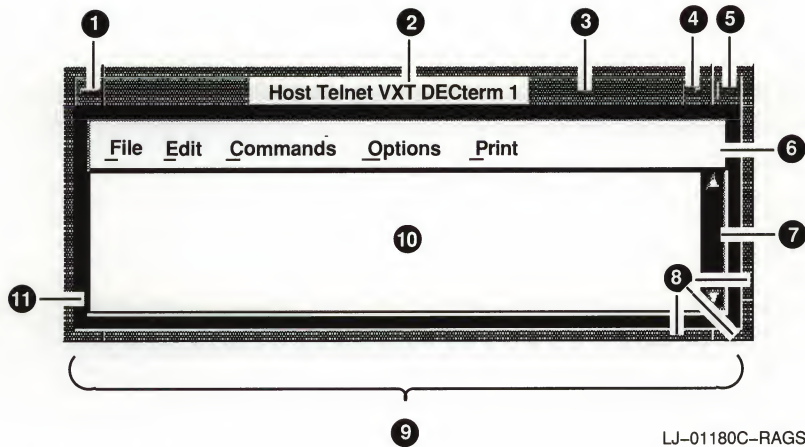
You can also perform many of these functions from the window menu. See Section 2.3.

#### 2.2.1 What Are Windows?

A window is an area on your screen that represents all or part of an application. You can use windows to view several applications at once. You can move windows on the screen, organizing information for easier use. The VXT DECterm window is one of several windows available on your terminal.

## Using Windows

### 2.2 Working with Windows



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- ❶ The **window menu button** displays a window menu that lets you perform common window management functions.
- ❷ The **window title** identifies the function of a window. For a main window, it usually contains the name of the application. For a dialog box, it may also contain specific information about the use of the window.
- ❸ The **title bar** includes the window title and is used for moving the window on the screen.
- ❹ The **minimize button** lets you shrink a window to an icon. An **icon** is a small graphic representation of the window.
- ❺ The **maximize button** is a toggle button that lets you enlarge a window to its maximum size or return it to its normal size.
- ❻ The **menu bar** contains pull-down menus for the application's commands. You can display the menus and choose menu items.
- ❼ The **scroll bar** at the right allows you to view text or graphics that do not fit in the window.
- ❽ The **resize border** surrounds an application window and lets you resize the application's window.
- ❾ The **window frame** includes the resize border and title bar.
- ❿ The **work area** displays the application's text and graphics.
- ⓫ The **matte** is an optional decorative border between the window frame and the work area.



## Using Windows

### 2.2 Working with Windows

#### 2.2.2 Selecting the Active Window

The terminal lets you open several windows on the screen. When you have several windows open at one time, you give **input focus** to a window by selecting it. Only one window can have input focus at a time. Input focus activates the window, allowing you to enter information in the window from your keyboard or mouse.

##### To select a window:

1. Point to any location in the window or its title bar.
2. Click MB1.

The window's title bar and frame is highlighted to indicate it has input focus. Any text you type appears in this window, if your application allows text entry. When you select another window, the first window's title bar and frame is no longer highlighted.

Window With Input Focus



Window Without Input Focus

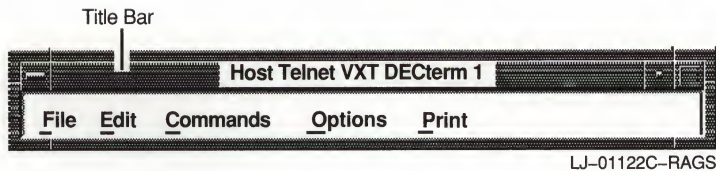


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**Optional Method:** You can also set the terminal to make a window active simply by moving the pointer into the window. See Section 5.3.

#### 2.2.3 Moving Windows

When you display several windows, they may overlap one another on the screen. You can rearrange the windows to make them visible.



**To move a window by the title bar:**

1. Point to the window's title bar.
2. Press and hold MB1. The pointer changes to a cross, and an outline of the window is displayed.
3. While holding MB1, drag the outline to the new location.
4. Release MB1. The window moves to the new location.

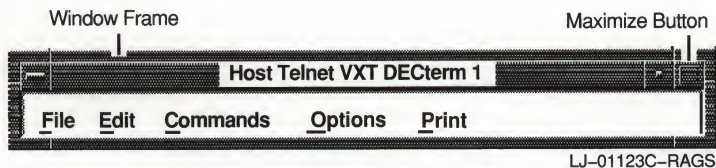
## 2.2.4 Changing the Size of Windows

You can make windows larger, to display more information. You can also make windows smaller, so you can view more applications.

There are three ways to change the size of your windows.

- Window frame
- Maximize button
- Window menu

To use the window menu, see Section 2.3.

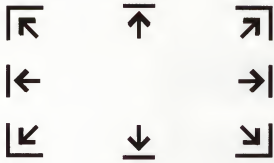


**To make a window larger or smaller:**

1. Point to a location on the window's frame. Depending on the location chosen, the pointer changes to a **resize cursor**.

## Using Windows

### 2.2 Working with Windows



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2. Press and hold MB1. An outline of the window is displayed.
3. While holding MB1, drag the window outline to make the window the size you want. You can move vertically, horizontally, or diagonally to change one or both dimensions of the window in any direction. The window outline changes size as you move.
4. Release MB1. The size of the window changes to the outline size.

#### To maximize the size of a window:

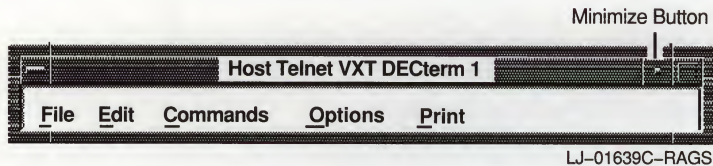
You can enlarge a window to cover the entire screen by using the maximize button.

1. Point to the window's maximize button.
2. Click MB1. The window expands to fill the entire screen.

Pressing the maximize button again returns the window to its normal size.

### 2.2.5 Reducing Windows to Icons

You can reduce a window to an icon by using the minimize button. Minimizing a window frees up space on your screen to run other applications. The application represented by the icon continues to run in memory and remains easily accessible.



#### To reduce a window to an icon:

1. Point to the window's minimize button.
2. Click MB1. The window closes, and its icon is displayed at the lower right of the screen.



**To restore a window from an icon:**

1. Point to the icon on the screen.
2. Double click MB1. The window is restored at the position where it was minimized.

**To rearrange icons in the lower-right portion of the screen:**

1. Point to the icon.
2. Press and hold MB1. A moving pointer and outline is displayed.
3. While holding MB1, drag the icon to the new location. The outline follows the moving pointer, showing where the icon will be repositioned.
4. Release MB1. The icon moves to the new location.

## **2.2.6 Raising and Lowering Stacked Windows**

When windows overlap, you can view partially concealed windows by changing their stacking order rather than moving windows around on the screen.

You can raise a window to the top of the stack by clicking on any visible portion of the lower window. Clicking on the window also gives it input focus.

You can also lower the top window to the bottom of the stack by using the window menu.

## **2.3 The Window Menu**

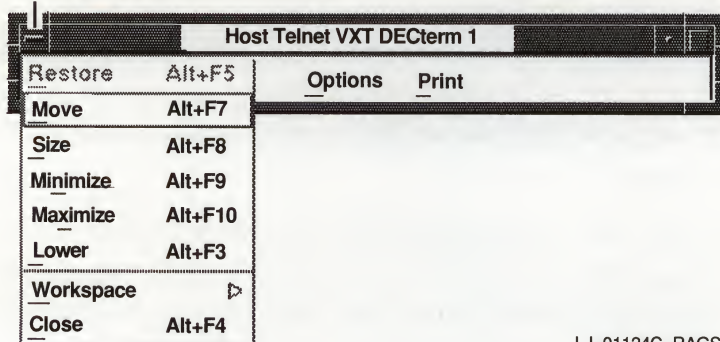
The window menu provides another method for performing window management commands, such as sizing, moving, and stacking windows. To display the window menu, click on the window menu button at the left corner of the title bar.

You can also display the window menu by clicking on MB3 in the window border.

## Using Windows

### 2.3 The Window Menu

Window Menu Button



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From the window menu, you can choose the following menu items. Some items may not apply to a particular window.

#### **Restore**

To restore a window from an icon:

1. Point to the window's icon at the lower right of the screen.
2. Click MB1. The window menu is displayed.
3. Choose the Restore menu item. The window is restored at the position where it was minimized.

#### **Move**

When you choose the Move menu item, a moving pointer and outline of the window is displayed. To move the window:

1. Move the window outline to the new location.
2. Click MB1. The window moves to the new location.

#### **Size**

When you choose the Size menu item, a moving pointer and window outline are displayed. To resize the window:

1. Move the pointer vertically, horizontally, or diagonally until the window outline is the desired size.
2. Click MB1. The window size changes to the new size.

#### **Minimize**

When you choose the Minimize menu item, the window closes and its icon appears at the lower right of the screen.



### **Maximize**

When you choose the Maximize menu item, the window expands to fill the entire screen.

### **Lower**

When you choose the Lower menu item, you lower the top window to the bottom of the stack.

### **Workspace**

The Workspace menu item provides access to a submenu with more choices for stacking windows and icons. See Section 2.3.1.

### **Close**

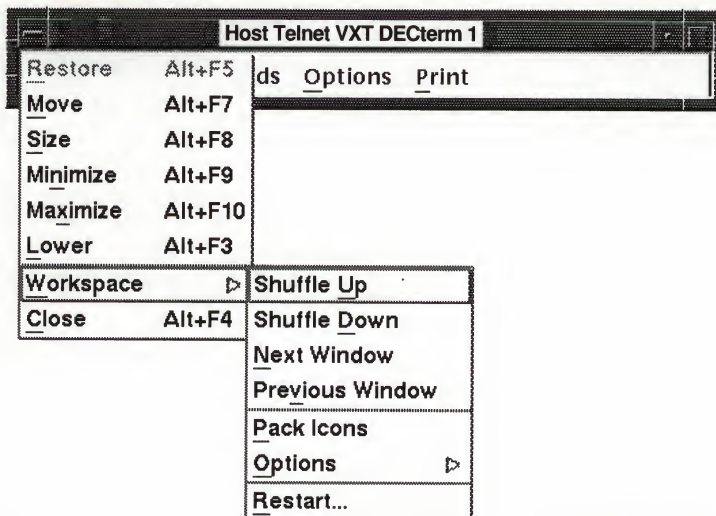
When you choose the Close menu item, the window closes.

## **2.3.1 Using the Workspace Submenu**

The workspace submenu lets you control the stacking order of your windows and icons. You can also access the Options submenu to customize window features. After you customize features, you can save your settings by restarting the window manager from the workspace submenu.

To view the workspace submenu:

1. Click on the window menu button to display the window menu.
2. Click on the Workspace menu item to display the workspace submenu.



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## Using Windows

### 2.3 The Window Menu

You can also display this menu as a pop-up menu, by clicking on MB1 (for left-handed buttons) or MB3 (for right-handed buttons) in the screen background.

From the workspace submenu you can choose any of the following menu items:

#### **Shuffle Up**

The Shuffle Up menu item lets you move the bottom window to the top of the stack, giving that window input focus.

#### **Shuffle Down**

The Shuffle Down menu item lets you move the top window to the bottom of the stack.

Shuffle Up and Shuffle Down are useful for uncovering small windows that are completely concealed by larger windows.

#### **Next Window**

The Next Window menu item gives input focus to the next window in the stack.

#### **Previous Window**

The Previous Window menu item gives input focus to the previous window in the stack.

#### **Pack Icons**

The Pack Icons menu item lets you stack the icons in order at the lower right of the screen.

#### **Options**

The Options menu item lets you display a submenu with items for checking and controlling the settings for many of the window manager's features. Chapter 5 describes the options submenu.

#### **Restart...**

The Restart... menu item lets you save your window manager settings and restart the window manager. When you choose the Restart... menu item, the terminal displays a confirmation box. Chapter 5 further describes the Restart menu item.

## 2.4 Working With Menus

Menus display a list of related items that you can choose from. Some menu items perform actions, while others display screens with more information to choose from, such as dialog boxes. The terminal's windows use three types of menus:

- Pull-down menus
- Pop-up menus
- Options menus

### Using the Keyboard to Choose Menus and Menu Items

If you prefer, you can perform menu actions from the keyboard, without using a mouse. There are three methods:

- Each menu name and menu item has an underlined letter, called a **mnemonic**. To display a menu or activate a menu item, you can press the **Alt** key and the underlined letter on the keyboard at the same time. A menu remains displayed after you release the keys. You can then use the arrow keys to move to different menu items and menus.
- Some menu items in the Window Manager window menu list an **accelerator** key sequence on the right. You can use the accelerator key sequence to perform that menu function. You do not have to display the menu to perform the function.
- You can use the arrow keys to move the pointer around the screen. Press **Shift** **Ctrl** **F3** to turn this feature on or off. You can use the following keys to perform mouse functions:

Select	MB1
Prev	MB2
Next	MB3

For more key sequences, see Section 12.4.

### 2.4.1 Choosing Items from Pull-Down Menus

The menu bar of a window lists the names of menus for that application.

#### To display a pull-down menu:

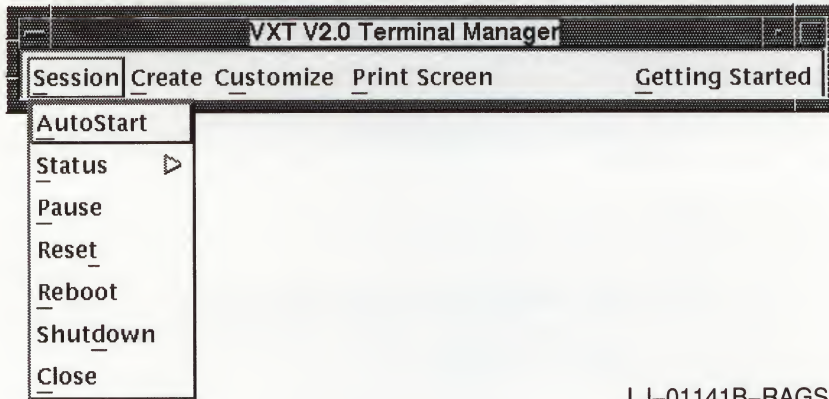
Point to the menu name, then click on MB1. The menu remains displayed until you choose a menu item or click MB1 outside the menu.



## Using Windows

### 2.4 Working With Menus

Here is an example of a pull-down menu:



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Some pull-down menus list commands. Others list the names of items you can work with.

If a menu item is followed by three periods (...), choosing that item displays a dialog box. If a menu item is followed by an arrowhead (▷), choosing that item displays a submenu.

#### To choose an item from a pull-down menu:

1. On the menu bar, point to the name of the menu you want to display.
2. Click MB1 to pull down the menu.
3. Move the pointer to the menu item you want.
4. Click MB1 to choose the menu item.

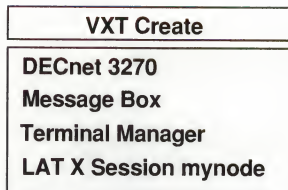
If you change your mind while looking at a pull-down menu, drag the pointer outside the menu and release MB1. The menu disappears, and no action is taken.

### 2.4.2 Choosing Items from Pop-Up Menus

Pop-up menus provide quick access to functions that are also available on pull-down menus.

The terminal provides a pop-up Workspace menu (Chapter 5) for managing windows and a pop-up VXT Create menu (Section 3.2.7) for quickly starting sessions. To display the Workspace menu, click and hold MB1 anywhere on the screen background outside windows. To display the VXT Create menu, click and hold MB2 anywhere on the screen background. Here is a sample VXT Create pop-up menu:





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Some host applications you use may also provide pop-up menus within their window. In most cases, you click and hold MB1 within the window area to display the pop-up menu.

**To choose items from pop-up menus:**

1. While holding the designated mouse button down, drag the pointer to the menu item you want.
2. Release the mouse button.

If you decide not to choose an item, drag the pointer outside the menu before releasing the mouse button.

### 2.4.3 Choosing Items from Options Menus in Dialog Boxes

An options menu is a type of pop-up menu used in dialog boxes. The dialog box displays the current selection from the menu.

**To display an options menu and choose a new setting:**

1. Press and hold MB1 on the current option, to display the menu.
2. Drag the pointer to the setting you want.
3. Release MB1. The dialog box now displays your new setting.

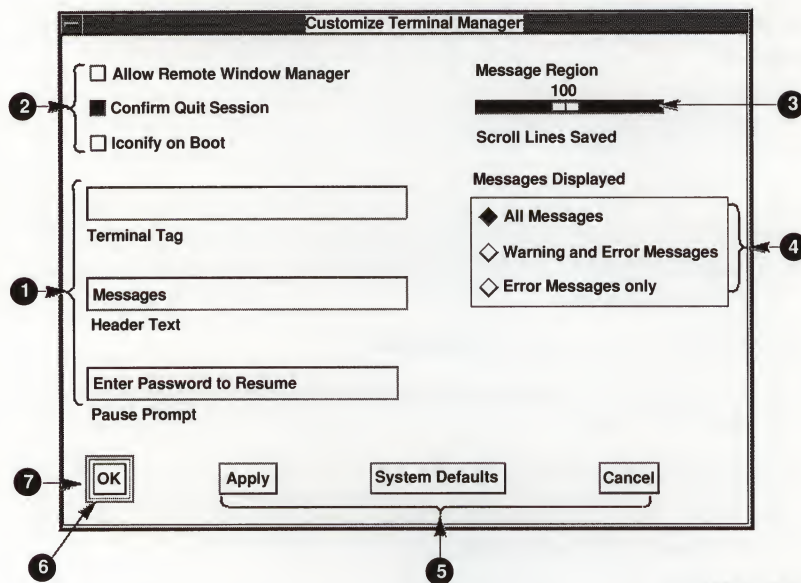
If you decide not to make a change, drag the pointer outside the menu and release MB1.

## 2.5 Supplying Information in Dialog Boxes

Windowing applications display a dialog box when they need more information from you to carry out a task. Dialog boxes are like forms, offering various ways to supply information. In some dialog boxes, you need to enter text. In others, you click MB1 on a button to change a setting. Some dialog boxes display settings you chose earlier.

## Using Windows

### 2.5 Supplying Information in Dialog Boxes



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**1** Text-entry box

Clicking on a text-entry box allows you to enter text from the keyboard into the box. Each text-entry box has a text cursor (I). When you click on the box it receives input focus, indicated by a blinking cursor and a gray outline (on monochrome terminals) or the current highlight color (on color terminals).

What you type appears to the left of the cursor. Use the **<X>** key to delete typing mistakes. Use the **<←>** and **<→>** keys to move within the text. Password text-entry boxes do not display a text cursor.

If a dialog box has more than one text-entry box, you can move between boxes by

- Clicking MB1 on the box you want
- Pressing **<Tab>** to advance to the next box in the window

**2** Check buttons

Clicking on a square check button turns a setting on or off.

**3** Scales

You use scales to select a numeric value from a range of settings. You drag a slider in the scale. The arrow in the slider points to the current value.

## Using Windows

### 2.5 Supplying Information in Dialog Boxes

- ④ Radio buttons Clicking on a diamond-shaped radio button selects that option from a group of options.
- ⑤ Push buttons Clicking on a rectangular push button (such as OK, Apply, Cancel, or System Defaults) tells an application what to do with the information you supplied in the dialog box.
- ⑥ Default push buttons A button with a second border is the default action for a dialog box. On a color terminal, the border area looks recessed. Default actions are those that you choose most frequently. Usually, the OK button is the default action for a dialog box. You can also choose the default action by pressing the **Return** key.
- ⑦ Push buttons with input focus A default button with a third border has input focus. Input focus means that keyboard input is connected to the push button. You can change the input focus by clicking on another element in the dialog box. When you open a dialog box, the OK button usually has input focus.

When you enter a dialog box that has a text field, the OK button is the default option but does not have input focus. In some dialog boxes, the default action may change from the OK button to another button after you start using the dialog box.

#### 2.5.1 Dimmed Items in Menus and Dialog Boxes

If a menu item, button, or text-entry box is dimmed, you cannot currently use that item. There are several reasons why an item may be dimmed:

- You must perform some other action before you can choose the item.
- Your VXT manager has configured your terminal so that item is not selectable.

#### 2.5.2 Moving and Changing Settings in a Dialog Box

Here are the methods for moving among text-entry boxes and for changing text entries, button settings, and scales in a dialog box.

##### Moving

To move . . .	Do this . . .
Forward among text-entry boxes.	Press <b>Tab</b> or click MB1 on the box.
Backward among text-entry boxes.	Press <b>Shift Tab</b> , or click MB1 on the box.
The cursor in a text-entry box	Point to where you want to insert text and press MB1, or use the <b>←</b> or <b>→</b> keys.



## Using Windows

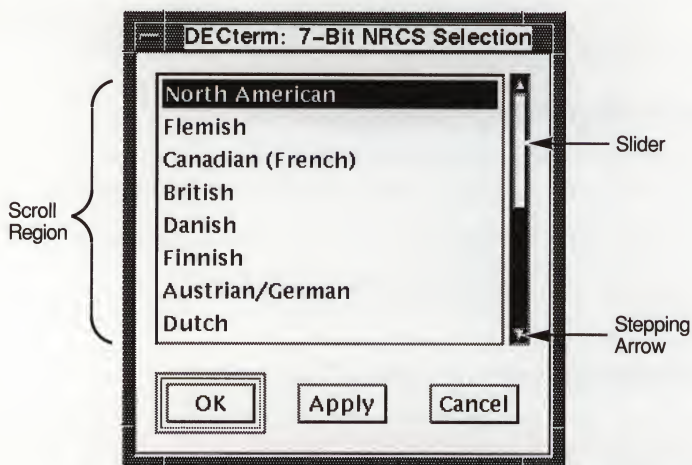
### 2.5 Supplying Information in Dialog Boxes

#### Changing

To . . .	Do this . . .
Change a radio or check button setting.	Point to the button and click MB1.
Change the numeric value on a scale.	Drag the slider left or right on the scale, or point to a location on the scale and click MB1.

## 2.6 Using Scroll Bars

Some windows have **scroll bars** that let you view text or graphics that do not fit in the window. A scroll bar has **stepping arrows** at either end of the **scroll region**. The **slider** represents your relative position in the list or file. If the slider is at the top of the scroll region, the beginning of the list is visible. If the slider is at the bottom of the scroll region, the end of the list is visible.



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The size of the slider tells you how much of the list the window is displaying. If the slider is as large as the scroll region, the complete list is displayed. If the slider is small, only part of the list is displayed. The smaller the slider, the larger the list.

**Using scroll bars:** You can scroll a line at a time, a window at a time, or to a selected point.

## Using Windows

### 2.6 Using Scroll Bars

To scroll this way . . .	Do this . . .
One line at a time.	Click MB1 on the stepping arrow at either end of the scroll bar.
Forward one window of text at a time.	Point to the scroll region below the slider and click MB1.
Backward one window of text at a time.	Point to the scroll region above the slider and click MB1.
Continuously, one line at a time.	Press and hold MB1 on the stepping arrow at either end of the scroll bar.
Continuously, one window of text at a time.	Press and hold MB1 in the scroll region.
To another location in the list or file.	Drag the slider to a point in the scroll region that you think corresponds to the location you want to see. For example, if the slider is at the top of the scroll region, you are viewing the beginning of the list or file.  To cancel the drag, click another mouse button before releasing MB1.



# 3

## Using the Terminal

This chapter describes how to start using the terminal with VXT software.

When you turn on the terminal, it normally displays the Terminal Manager window after loading VXT software. This window acts as a control panel for creating sessions and customizing terminal settings.

*VXT 2000+ / VXT 2000 Windowing Terminal Getting Started* provides step-by-step instructions to start creating sessions with the Terminal Manager window. This chapter provides more details and describes other basic functions you can perform from the Terminal Manager window. The chapter covers the following major topics:

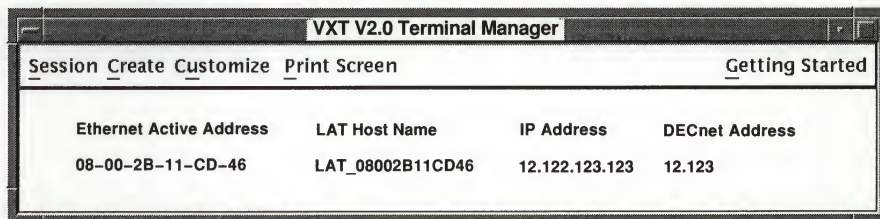
- Terminal Manager Window
- VXT Message Box
- Creating Sessions and VXT Applications
- Autostarting, Pausing, or Ending Sessions
- Checking Network and Terminal Status
- Working with Multiple Remote X Session Managers
- Printing
- Getting Started Menu

If you want to use VXT EX software, see Chapter 11. When you use VXT EX software, the terminal displays a VXT EX connection window instead of the Terminal Manager window.



## 3.1 Terminal Manager Window

When you turn on the terminal, it normally displays the Terminal Manager window and VXT Message Box. Here is the Terminal Manager window:



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- The **title bar** displays the window title and VXT software version.
- The **menu bar** provides access to the following menus:
 

Session	To end, pause, or autostart a session, or to display network and terminal status information (Chapter 10)
Create	To start X sessions, terminal windows, and local terminal applications
Customize	To customize terminal manager features and access the Configuration Manager dialog boxes
Print Screen	To print all or part of the screen on a local printer, or to cancel a LAT print job
Getting Started	To get help on creating sessions and entering your terminal's IP or DECnet address To access the InfoReader library of online VXT documentation (server-based terminals)
- The **address** region shows the terminal's Ethernet, LAT, IP, and DECnet addresses. These addresses define the terminal's location on a network for LAT, TCP/IP, and DECnet communications.  
Initially, the IP and DECnet addresses are blank. To use TCP/IP or DECnet communications, you must enter and save the terminal's IP or DECnet address in the appropriate Customize Communications dialog box.  
Initially, the Ethernet Active Address field displays the terminal's Ethernet hardware address. If you enable DECnet communications, the displayed Ethernet address is converted to a global network address in the network service access point (NSAP) format. In this case, you can still view the Ethernet hardware address in the System Configuration dialog box.

## Using the Terminal

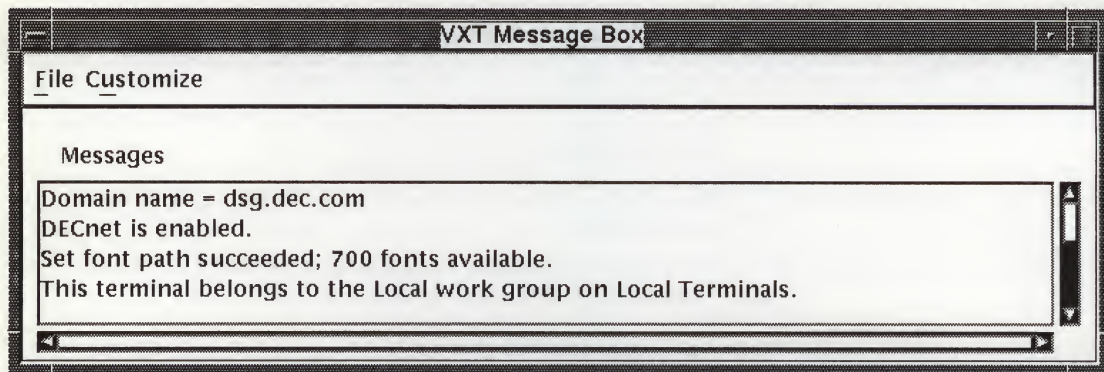
### 3.1 Terminal Manager Window

#### 3.1.1 VXT Message Box

The VXT Message Box lets you monitor system messages that affect the terminal's operating status.

The VXT Message Box provides a Customize menu that lets you choose the category of messages displayed and change the box's position and size (Section 6.14).

Normally, the terminal starts the Terminal Manager window and the VXT Message Box as a single application. You can start them as separate applications if you want to control them separately (Section 6.11). In this case, the VXT Message Box also includes a File menu with an Exit item that lets you close the box.



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#### 3.1.2 Closing the Terminal Manager Window and VXT Message Box

The Terminal Manager window and Message box are local VXT applications. You can close these applications without closing your other open sessions. Closing the Terminal Manager window can free the terminal's memory to perform other tasks. You can restart the Terminal Manager window and VXT Message Box if needed.

**To close the Terminal Manager window and VXT Message Box:**

- Click on the Session menu in the Terminal Manager window.
- Click on the Close menu item.

If you have customized settings in the Customize AutoStart dialog box to run the Terminal Manager window and VXT Message Box as separate applications, the VXT Message Box remains open.



**To restart the Terminal Manager window and VXT Message Box:**

1. Click and hold MB2 anywhere on the screen background, outside your windows. The terminal displays the pop-up VXT Create menu.
2. Click on the Term Mgr + Msg Box menu item.

**Hiding the Terminal Manager Window**

You can also hide the Terminal Manager window and Message Box applications without stopping them. You can choose to hide these applications each time you start the terminal or hide them during operation. You can enable the **F3** key to act as a toggle switch for hiding or displaying these applications. See Section 6.10.

## 3.2 Creating Sessions and VXT Applications

You can open two types of sessions on host systems—an X session or a terminal window session. X sessions let you access X window applications on your host. Terminal window sessions provide a VXT DECterm or VXT 3270 terminal emulator for accessing traditional video terminal applications on your host. You can open multiple sessions.

You can also start or stop three VXT applications:

- Terminal Manager window
- VXT Message Box
- Motif window manager

By default, the terminal starts all three applications when you turn on or reset the terminal.

Initially, you use a Create dialog box to start sessions or change VXT applications. After you save a list of preferred services in the dialog box, you can quickly start sessions and VXT applications from the pull-down Create menu or pop-up VXT Create menu.

### 3.2.1 Displaying the Create Dialog Box

To display the Create dialog box:

1. Click on the Create menu in the Terminal Manager window.
2. Click on Other... menu item to display the Create dialog box.

---

**Note**

Your system manager can use the terminal's configuration manager to prevent users from accessing the Create dialog box. In this case, the



## Using the Terminal

### 3.2 Creating Sessions and VXT Applications

Other... menu item is dimmed.

**Create**

Preferred Services

Application	Transport	Host	Comment
X Session	TCP/IP	16.122.128.57	TCP/IP X Session 16
DECTerm	LAT	SHAUNA	LAT DECTerm SHAUNA
DECTerm	DECnet	61.513	DECnet DECTerm 61.5
Term Mgr + Msg Box			Term Mgr + Msg Box
Motif WM			Motif WM

Application: ☒ X Session, ☐ DECTerm, ☐ 3270 (License Req'd), ☐ Motif WM, ☐ Terminal Manager, ☐ Message Box, ☐ Term Mgr + Msg Box

Transport: ☒ TCP/IP, ☐ LAT, ☐ DECnet, ☐ Serial

Host Name or IP Address:

Comment:

☐ Any Host, ☐ Any Host Indirect

Buttons: Start, System Defaults, Close, Clear, List Known Hosts...

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You can connect to hosts or services on a network supporting the TCP/IP, LAT, or DECnet protocol.

#### 3.2.2 Starting LAT or Serial Sessions


To start a LAT or serial session from the Create dialog box:

1. In the Application box, click on the type of session you want to start: X Session, DECTerm, or 3270.
2. In the Transport box, click on the communication method to use for the session: LAT or Serial.

Skip the next step if you chose the Serial transport.

## Using the Terminal

### 3.2 Creating Sessions and VXT Applications

3. Click on the Host Name or Address box and enter the name or address of the host you want to connect to.
4. Click on the  button to add your session settings to the Preferred Services scroll box.
5. Click on the Save button to save your Preferred Services list for future use. The terminal adds your services to the Create menu and VXT Create pop-up menu for quick access.
6. Click on the Start button to connect to the host. The terminal displays a log-in window.
7. Log in to the session.

If the Start button is dimmed:

If you are trying to start a serial DECterm window, see Section 7.2.1 to change the Port Usage feature to set the serial port to work as a host port.

#### 3.2.3 Starting a DECnet Session

Before you create your initial DECnet session, you must enter and save your terminal's DECnet address (Section 7.2.7).

Your host system must have the VXT\$SERVER DECnet object installed. For more information, see the section on the OpenVMS operating system in *VXT Software Version 2.0 Installation and System Management*.

To start a DECnet session from the Create dialog box:

1. In the Application box, click on the type of session you want to start: X Session, DECterm, or 3270.
2. In the Transport box, click on the DECnet button.
3. Click on the Host Name or Address box and enter the DECnet host address or name (up to 6 characters). Host names require at least one alphabetic character.


You can specify DECnet addresses in two forms:

- The long form uses a period to separate the area number and node number. For example: 61.513.
- The short form collapses the area and node numbers into a single decimal value, using the formula (*area\_number* × 1024) + *node\_number*. For example: 62977 = (61 × 1024) + 513.

If you want to use host names instead of addresses, you first must enter and save the address of your network's DECnet name translator (Section 7.2.8).

## Using the Terminal

### 3.2 Creating Sessions and VXT Applications

4. Click on the  button to add your session settings to the Preferred Services scroll box.
5. Click on the Save button to save your Preferred Services list for future use. The terminal adds your list to the Create menu and VXT Create pop-up menu for quick access.
6. Click on the Start button to connect to the host. The terminal displays a log-in window.
7. Log in to the session.

#### 3.2.4 Starting an IP Session

Before you create your initial session, you must enter and save your terminal's TCP/IP address (Section 7.2.4).

---

#### Note

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You can create only one IP X session to a given host. If you try to create a second IP X session to the same host, the X display manager (XDM) closes the first IP X session while creating the second IP X session.

---

To start an IP session from the Create dialog box:

1. In the Application box, click on the type of session you want to start: X Session, DECterm, or 3270.
2. In the Transport box, click on the TCP/IP button.
3. Click on the Host Name or Address box and enter the IP host address or name (up to 30 characters).

If you want to use host names instead of addresses, you first must enter and save the address of your network's TCP/IP name server (Section 7.2.5).

#### Options:

- Use the Any Host button if you want to use the first available IP host.
- Use the Any Host Indirect button to specify a host that will act as a pathway to find the first available IP host. Specify the host in the Host Name or Address box.
- Use the Comment box to enter optional text comments. For example, if you entered a host name, you may want to enter the IP address as a comment.



## Using the Terminal

### 3.2 Creating Sessions and VXT Applications

- Use the List Known Hosts... button to display a dialog box that lets you list available IP hosts.


See Section 3.2.4.1 for button descriptions.

You can enter a host IP address in one of the following formats:

Format	Example
Decimal whole number	215279382
Decimal dot notation	12.212.231.22
Hexadecimal	0xcd4e716
Hexadecimal dot notation	0xc.d4.e7.16
Octal dot notation	01465163426
Octal whole number	014.324.347.26

For DECterm windows, you can specify the port for Telnet to connect on. Simply append a comma to the host name or IP address followed by the port number.

Format	Example
Host_Name,Port	market,24
IP_Address,Port	12.212.231.22,24

4. Click on the  button to add your session settings to the Preferred Services scroll box.
5. Click on the Save button to save your Preferred Services list for future use. The terminal adds your list to the Create menu and VXT Create pop-up menu for quick access.
6. Click on the Start button to connect to the host. The terminal displays a log-in window.
7. Log in to the session.

#### HP-UX Systems: Reset Required if You Cannot Log In

When creating X IP sessions to the HP-UX system, you may have to reset the terminal if you are unable to log in. This is because the HP-UX system does not issue a server reset after closing the login box.

#### 3.2.4.1 Optional Buttons for Specifying IP Hosts

##### ☐ Any Host

Use the Any Host button if you want to connect to first available IP host on the network. When you click on the Any Host button, an asterisk appears in the Host Name or IP Address box.

## Using the Terminal

### 3.2 Creating Sessions and VXT Applications

#### ☐ Any Host Indirect

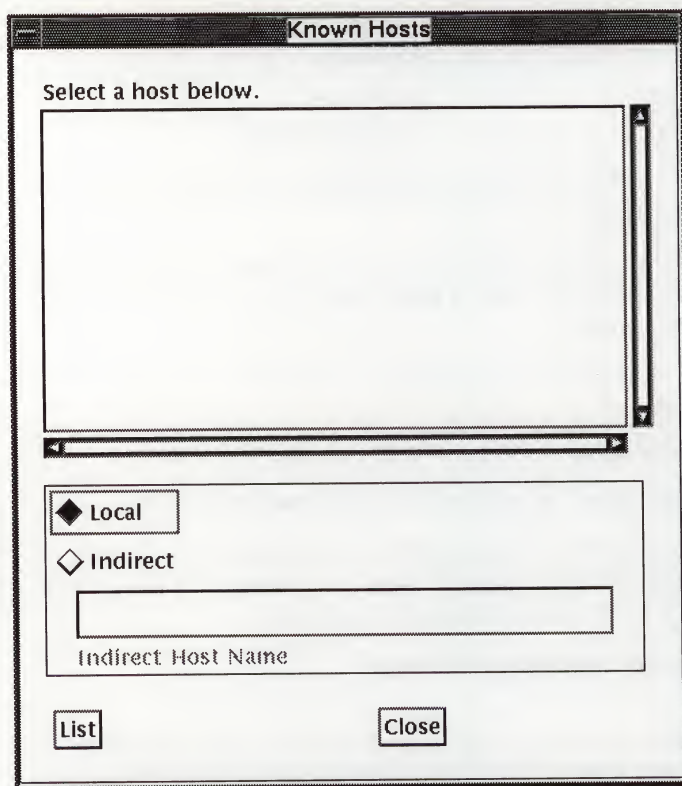
Use the Any Host Indirect button if you want to enter a host to use as a path to your destination host. When you click on the Any Host Indirect button, the title of the Host Name or IP Address box changes to Through Host Name or IP Address. You can then enter the host name or IP address of the host to use as a pathway.

#### ☐ Optional Comment for Host

You can store optional text comments with your host name or IP address. For example, if you entered a host name in the Host Name or IP Address box, you may want to store the IP address as a comment.

#### ☐ List Known Hosts...

You can choose from a list of hosts on your local subnet or on other subnets, by using on the List Known Hosts... button. Click on the button to display the Known Hosts dialog box:



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## Using the Terminal

### 3.2 Creating Sessions and VXT Applications

The Known Hosts dialog box lists the available TCP/IP hosts and services on the network. If the host you want is not listed, it may be currently unavailable. Click on the List button to update the list. You may have to click on this button several times before the host you want is listed. Sometimes it takes a few minutes for the terminal to establish communication with hosts on the network.

If the Known Hosts box displays IP addresses and ? marks where host names should appear, you need to enter your TCP/IP Name Server address in the TCP/IP Name Server dialog box (Section 7.2.5).

#### **To view hosts on the local subnet:**

Click on the Local button. The dialog box lists known host in the terminal's local subnet. In the following example, 135 represents the local subnet of the terminal.

Subnet example:

16.122.135.222

#### **To view hosts on other subnets:**

Click on the Indirect button. Then click on the Indirect Host Name box and enter the name of a host to use as a source for subnet information.


#### **To connect to a Host in the Known Hosts scroll box:**

There are two ways to connect.

- Double click on the host in the Known Hosts scroll box.
- Click on the host name or address in the Known Hosts scroll box. The name or address appears in the Host Name or IP Address box of the Create Session dialog box.

Click on the Connect button in the Create dialog box.

#### **To add a host from the Known Hosts dialog box to the Preferred Hosts scroll box:**

1. Click on the host name in the Known Hosts scroll box. The host name appears in the Host Name or IP Address box of the Create dialog box.
2. Click on the  button in the Create dialog box. The host appears in the Preferred Hosts scroll box.
3. Click on the Save button in the Create dialog box.

#### **To update the scroll box list for host and host availability:**

Click on the List button.



## Using the Terminal


### 3.2 Creating Sessions and VXT Applications

**To close the Known Hosts dialog box:**

Click on the Close button.

#### 3.2.5 Starting VXT Applications

To start a VXT application from the Create dialog box:


1. In the Application box, click on the type of local application you want to start: Motif Window Manager, Terminal Manager, Message Box, or Terminal Manager + Message Box.  
By default, the terminal runs the Terminal Manager window and VXT Message Box as a single application.
2. Click on the  button to add the application to the Preferred Services scroll box.
3. Click on the Save button to save your Preferred Services list for future use. The terminal adds your list to the Create menu and VXT Create pop-up menu for quick access.
4. Click on the Start button if you wish to start the application.

If the application is already running, it will not start again. Only one copy of an application can run at a time.

#### 3.2.6 Preferred Services

You can add, move, and delete services from your Preferred Services list in the Create dialog box.

**To add a service to the Preferred Services scroll box:**

1. Use the Application, Transport, and Host Name or Address boxes to specify the service you want to add.
2. Click on the  button to add the service to the Preferred Services scroll box.
3. Click on the Save button to save your service's name so you do not have to enter it each time you turn on the terminal.

**To start a session or application from the Preferred Services scroll box:**



- Double click on a service in the Preferred Services scroll box.
- Click on a service in the Preferred Services scroll box. The service name appears in the Service or Host Name box. Click on the Connect button.

**To move a service in the Preferred Services scroll box:**

## Using the Terminal

### 3.2 Creating Sessions and VXT Applications

You can move a service up or down in the list. The terminal will display the services in the same order on the Create pull-down submenus and the VXT Create pop-up menu.

1. Click on the service name you want to move.
2. Click on the  or  button to move the service one place up or down in the list.

#### To remove a service from the Preferred Services scroll box:

1. Click on the service name you want to remove.
2. Click on the trash can button.

### 3.2.7 Creating Sessions from a Menu: Preferred Services

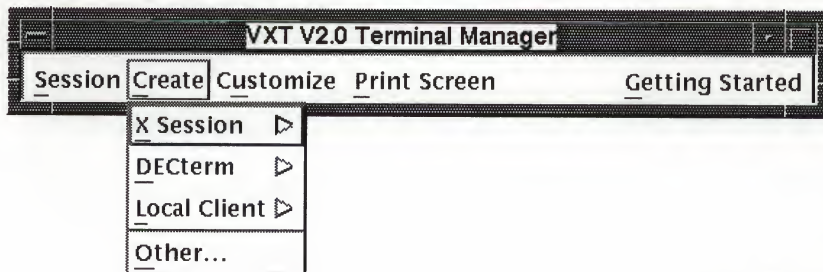
After you save preferred services in the Create dialog box, the terminal adds them to

- The Create menu, as submenus
- The VXT Create pop-up menu (after you restart the window manager)

You can quickly start a preferred service (a session or VXT application) by choosing the service name from these menus.

#### Create Menu

The Create menu adds a menu item for each type of session you have saved – DECTerm, X Session, and so on. When you choose one of these menu items, the terminal displays a submenu that lists all of your preferred services for that type of session.



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#### VXT Create Pop-Up Menu

After you restart the window manager, the VXT Create pop-up menu also lists all preferred services.

## Using the Terminal

### 3.2 Creating Sessions and VXT Applications

To restart the window manager and view the VXT Create pop-up menu:

1. Click and hold mouse button 1 (MB1) anywhere on the screen background, outside the Terminal Manager window and other windows.

The terminal displays a Workspace pop-up menu.

2. Drag the pointer to the **Restart...** menu item, then release MB1.

The terminal displays a confirmation box asking if you really want to restart the window manager.

3. Click on the **OK** button to restart the window manager.

The borders around the windows on the screen disappear while the window manager is being restarted.

4. After the window borders reappear, click and hold MB2 anywhere on the screen background.

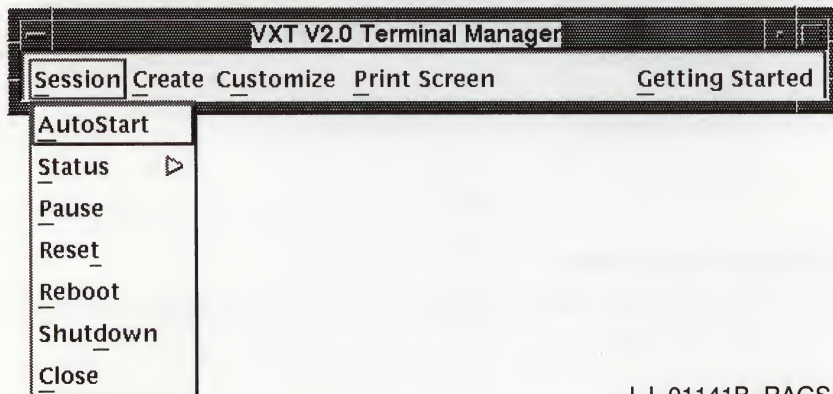
The terminal displays the VXT Create pop-up menu, listing your preferred services. The default VXT Create pop-up menu lists the combined Terminal Manager and VXT Message Box applications:



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### 3.3 Autostarting, Pausing, or Ending Sessions

The Terminal Manager window's Session menu lets you automatically start or pause a session. You can also end all sessions by using the Reset, Reboot, or Shutdown items to reset the terminal's VXT software.



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### 3.3.1 Autostarting a Session

The AutoStart menu item lets you quickly start the list of sessions and VXT applications that you saved in the Customize AutoStart dialog box. The terminal also autostarts this list when you perform any action that restarts the terminal, such as

- Turning the terminal on
- Choosing the Reset, Reboot or Shutdown menu items from the Session menu

To enter your AutoStart settings, see Section 6.11.

**To autostart your applications:**

1. Click on the Session menu in the Terminal Manager window.
2. Click on AutoStart. The terminal starts up the sessions in the order you listed them in the Customize AutoStart dialog box.

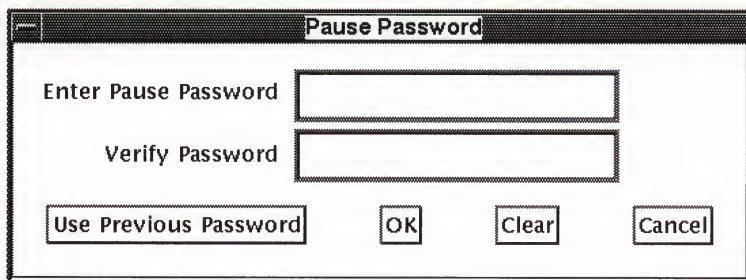
### 3.3.2 Pausing a Session

If you want to interrupt your work without ending your session, you can pause a session. When you pause a session, the terminal displays the Pause Password dialog box. After you enter and verify a pause password, the terminal clears the screen and displays the Enter Password to Resume prompt. Any applications you started continue to run. When you resume your session, you can continue work where you left off.

The pause password is valid for the current terminal session only. The password is not saved when you reboot or reset the terminal.

**To pause your session:**

1. Click on the Session menu in the Terminal Manager window.
2. Click on Pause to display the Pause Password dialog box.



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## Using the Terminal

### 3.3 Autostarting, Pausing, or Ending Sessions

3. You can enter a new pause password or use a previous pause password that you saved during the current terminal session.

#### To enter a new pause password:

- a. Enter the password in the Enter Pause Password box. The password may be from 1 to 127 characters. Blank spaces are not allowed.
- b. Click on the Verify Password box and enter the same password. If you make a mistake, click on the Clear button to start over.
- c. Click on the OK button to save the password and exit the dialog box.

#### To use your previous pause password:

Click on the Use Previous Password button.

When you click on the OK or Use Previous Password button, the terminal clears the screen and displays the Enter Password to Resume prompt.

Enter Password to Resume

Password

OK

Clear

Reset

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#### To resume your session :

Enter your password into the Password box and click on the OK button.

If you forget the password, you can click on the Reset button to end all sessions and restart the terminal.

#### If you choose... The terminal...

OK	Verifies that your password is correct.
Clear	Clears the password box.
Reset	Ends all sessions on the terminal. Resets the X server and restarts applications listed in the Customize AutoStart dialog box.

---

**Note**

---

The Reset button does not end a terminal window created on the serial port. To close a session on the serial port, choose the Exit menu item from the terminal window's File menu.

---

### **3.3.3 Ending All Sessions and Restarting VXT Software**

You can use the Reset, Reboot, or Shutdown menu items on the Session menu to end all active sessions on the terminal. If you choose Reboot or Shutdown, the terminal also reloads the VXT software from a host system or InfoServer system. You need to reload VXT software when you make changes in the Customize Language, Customize Boot, or Customize Communication dialog boxes.

**If you choose...    The terminal...**

Reset	Ends all sessions on the terminal. Resolicits the network for the terminal's resource file. Restarts you AutoStart sessions and clients. Resets the X server.
Reboot	Ends all sessions on the terminal. Resolicits the network for the terminal's resource file. Reloads VXT software. Restarts you AutoStart sessions and clients. Resets the X server.
Shutdown	Ends all sessions on the terminal and displays the message  Press RETURN to restart VXT After you press <span style="border: 1px solid black; padding: 0 2px;">Return</span> , the terminal Resolicits the network for the terminal's resource file. Reloads VXT software. Restarts you AutoStart sessions and clients. Resets the X server.

When you choose the Reset, Reboot, or Shutdown menu item, the terminal displays a confirmation box. To confirm your choice, click on Yes. To remain in the session, click on No. To bypass this confirmation box, see Confirm Reset Session in Section 6.10.

You can also reboot the terminal by pressing Ctrl+left Alt+keypad ..



## Using the Terminal

### 3.3 Autostarting, Pausing, or Ending Sessions

#### 3.3.4 Ending Individual Sessions

If you have multiple sessions open, you can end individual sessions. The effect of ending a session depends on the type of session.

##### Ending an IP X Session

You can end an IP X session by using the quit function in the remote session manager for that session. Quitting from the remote session manager (xsession) on a UNIX, ULTRIX, or DEC OSF/1 AXP system ends the xsession and the window manager (xwm).

##### Ending a LAT X or DECnet X Session

You can end a LAT X or DECnet X session by using the End Session function in the remote session manager for that session.

By default, using the End Session function from an OpenVMS remote session manager restarts the terminal, ending *all* sessions on the terminal. If your terminal is using VXT server-based software, you can customize the terminal so it only ends the LAT X window session without restarting the terminal. See Section 7.5.

##### Ending Terminal Window Sessions

You can end a Telnet, LAT, DECnet, or Serial terminal window session by using the Exit menu item in the window's File menu.

### 3.4 Checking Network and Terminal Status

You can use the Status menu item on the Session menu to access screens that help you identify network problems. You can

- View the terminal's configuration—software version, work group, network addresses, and installed options
- View TCP/IP routes and ping hosts to determine their availability
- Monitor and reset TCP/IP, LAT, and Ethernet counters
- Monitor memory and network utilization

Chapter 10 describes the Status submenu.

### 3.5 Working with Multiple Remote X Session Managers

Each X session you create has its own session manager on the host system. Each session manager expects to have complete control of your terminal. To maintain a consistent user interface when using multiple remote session managers, you should consider the effects on the terminal's feature settings and the Motif window manager.

### 3.5 Working with Multiple Remote X Session Managers

#### Feature Settings

The host session manager changes any settable features of your terminal, such as screen background, security, and keyboard selection.

If you run multiple session managers, each one sets up the terminal according to the terminal's saved settings at the time the session manager starts up. To keep the settings from changing unexpectedly, be sure to change and save all your preferences in all of your session managers.

When quitting from a remote session manager, a prompt box may appear asking if you want to save customized settings before quitting. This question refers only to the remote session manager's settings.

**Security Settings with OpenVMS DECwindows Session Manager** The DECwindows session manager overrides the terminal manager's Customize Security settings. Every time you log into a new OpenVMS host and run its DECwindows session manager, the security settings on the new node override the current settings. To maintain security, enter your settings on each host.

#### Remote Window Managers

You can choose whether or not a host-based window manager can take over windowing operations on the screen. The terminal's local window manager provides you with quicker response time and overall higher performance. However, a host-based window manager may offer more features. To let the host control windowing operations, click on the Allow Remote Window Manager button in the Customize Terminal Manager dialog box (Section 6.10).

### 3.6 Customizing Your Terminal's Environment

The Customize menu in the Terminal Manager window lets you check and control the settings for many features—from the keyboard to host communications. Chapter 6 describes the top half of the Customize menu, which provides access to user-preference and security settings. Chapter 7 describes the bottom half of the Customize menu, which provides access to system settings for communications, font paths, and booting VXT software.

### 3.7 Printing

This section describes how to

- Print the screen from the Print Screen menu
- Send printing jobs from a host system to the terminal's printer

You can also perform printing operations from the Print menu in VXT DECterm windows (Section 4.5).



## Using the Terminal

### 3.7 Printing

#### Supported Printers

The terminal supports level 1 and level 2 Digital printers.

- Level 1 printers include the LA50 and LA70 dot matrix printers.
- Level 2 printers include the LA75 and LA324 dot-matrix printers; LJ250 (serial) and LJ252 (parallel) color ink-jet printers; and LN03, LN05, and LN06 laser printers.

The terminal also supports PostScript printers, including Digital's DEClaser 1150 and ScriptPrinter, the HP LaserJet II and HP LaserJet III printers, and the IBM 4019 laser printer.

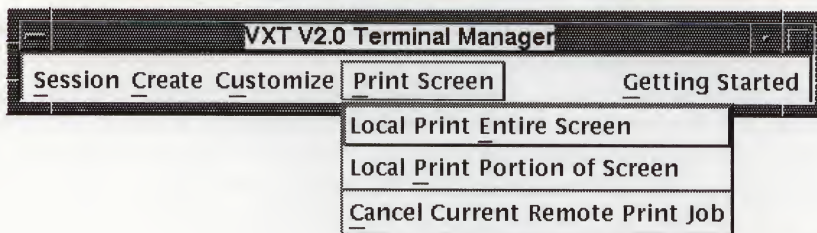
#### 3.7.1 Printing the Screen

The Print Screen menu in the Terminal Manager window lets you print all or part of the screen display, using a serial or parallel printer connected to the rear of the terminal. Depending on your printer, you can print monochrome, gray scale, or color displays in sixel or PostScript format.

You can also cancel a current printing job sent from a remote host system to the terminal's printer.

Before printing, you should customize the print screen settings and select the port you are using (serial or parallel). Normally, the print screen function is set to print a monochrome image in sixel format on the parallel port. To customize the print screen settings, see Section 6.6. To choose the printer port, see Section 7.2.1.

The Print Screen menu looks like this:



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#### To print the complete screen image:

Choose the Local Print Entire Screen menu item.



If you are printing from a VR319 monitor to an LA50 printer, the image may be too large for the page. Click on the Rotate/Scale Picture button in the Terminal Manager window's Customize Print Screen dialog box to print the image on the page.

**To print a portion of the screen image:**

1. Choose the Local Print Portion of Screen menu item. The pointer turns into a cross.
2. Wait for terminal to redisplay the Print Screen menu.
3. Move the pointer to one corner of the area you want to print. Hold down MB1 and drag the pointer to the opposite corner of the desired area. As you drag the pointer, a rectangular outline is displayed.
4. Release MB1 to send the selected image to the printer.

**To cancel a remote printing job that is currently printing:**

Choose the Cancel Current Remote Print Job menu item. The remote print job currently printing stops.

Normally, the terminal can accept printing jobs from systems using the TCP/IP or LAT transport. To change this setting, see Section 7.2.1.

**Printer Status**

When you send a job to the printer, the terminal displays printer status messages in the VXT Message Box.

Printer Offline	Indicates that the printer is turned off or not connected. The printer did not assert its DTR signal within 2 seconds after the print request.
Printer Busy	Indicates the printer is printing another job.

In both cases, your print request is canceled.

**Canceling a Print Screen Operation**

During large printing jobs, the terminal displays a Print Cancel dialog box to let you cancel the print operation. To cancel the print operation, click on the Click Here to Cancel Print button. Printing stops when the printer empties its input buffer. The Print Cancel dialog box is not printed.

## Using the Terminal

### 3.7 Printing

#### 3.7.2 Printing from a Host System

*VXT Software Version 2.0 Installation and System Management* describes how to set up the terminal's printer port for printing from a host system. After the host is set up, you can send printing jobs from the host to the terminal's printer.

You can print from hosts that use the TCP/IP or LAT transport.

##### Printing from Hosts that Use TCP/IP

To use TCP/IP for printing:

- The terminal's TCP/IP or Ethernet address must be displayed in the Terminal Manager window
- The Host Accessible Printer Port button must be enabled in the Customize Serial and Parallel Ports dialog box (Section 7.2.1). This is the default setting.
- The VXT printer support utilities provided with the VXT software installation kit must be installed on your host system.

The terminal accepts only one TCP/IP printing job at a time. If a second job is sent while the first job is printing, the second job is ignored and no notification is sent to the requester. The requester must wait until the first job completes, then submit the second job again.

**Printing from ULTRIX, DEC OSF/1 AXP, SunOS, or IBM AIX Hosts** Use the `lpr` command to submit printing jobs to the terminal's printer. Ask your system manager for the printer name to specify.

```
lpr -Pvxt_printer [-D] printfile
```

- *vxt\_printer* is the name of the printer connected to the terminal.
- *printfile* is the file to print.
- The `-D` option is for PostScript files. You can use this option if your printer supports PostScript printing.

For more information, see the `lpr` man page.

**Printing from an HP-UX or SCO ODT Host** Use the `lp` command to submit printing jobs to the terminal's printer. Ask your system manager for the printer name to specify.

```
lp -dvxt_printer printfile
```

- *vxt\_printer* is the name of the printer connected to the terminal.
- *printfile* is the file to print.

### Printing from Hosts that Use LAT

To print from an OpenVMS system to a VXT 2000 windowing terminal's printer, use the DCL PRINT command. Ask your system manager for the printer's queue.

```
$ PRINT/QUEUE=vxt_printer myfile.EXT
```

- *vxt\_printer* is the name of the terminal's printer queue. Use the queue name that was created when initializing the printer port.
- *myfile.ext* is the file you wish to print.

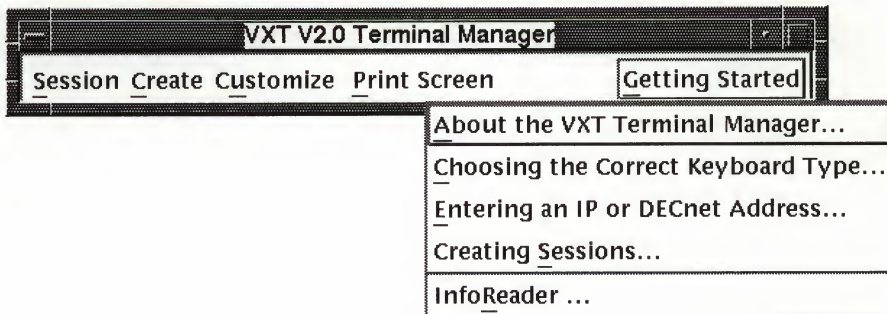
### Canceling a Remote Printing Job

To cancel a printing job from a host that is currently printing, choose the Cancel Current Remote Print Job menu item from the Print Screen menu in the Terminal Manager window. The terminal stops printing the current job.

## 3.8 Getting Started Menu

The Getting Started menu in the Terminal Manager window provides help on choosing your keyboard type, entering an IP or DECnet address, and creating sessions. If you have a server-based terminal, you can also access the InfoReader library of online VXT documentation.

To display the Getting Started menu, click on the Getting Started menu in the menu bar. The Getting Started menu looks like this:



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## Using the Terminal

### 3.8 Getting Started Menu

#### InfoReader—Viewing Online VXT Documentation

To view online VXT documentation, choose the InfoReader... menu item. The documentation is an optional part of the VXT software installation. The InfoReader utility is similar to the Bookreader utility on DECwindows systems. When you choose the InfoReader... menu item, the terminal displays a new window that lists the available VXT document titles. If you are unfamiliar with Bookreader or InfoReader, double click on the *Using InfoReader* selection.

For VXT Version 2.0 software, the following titles are available:

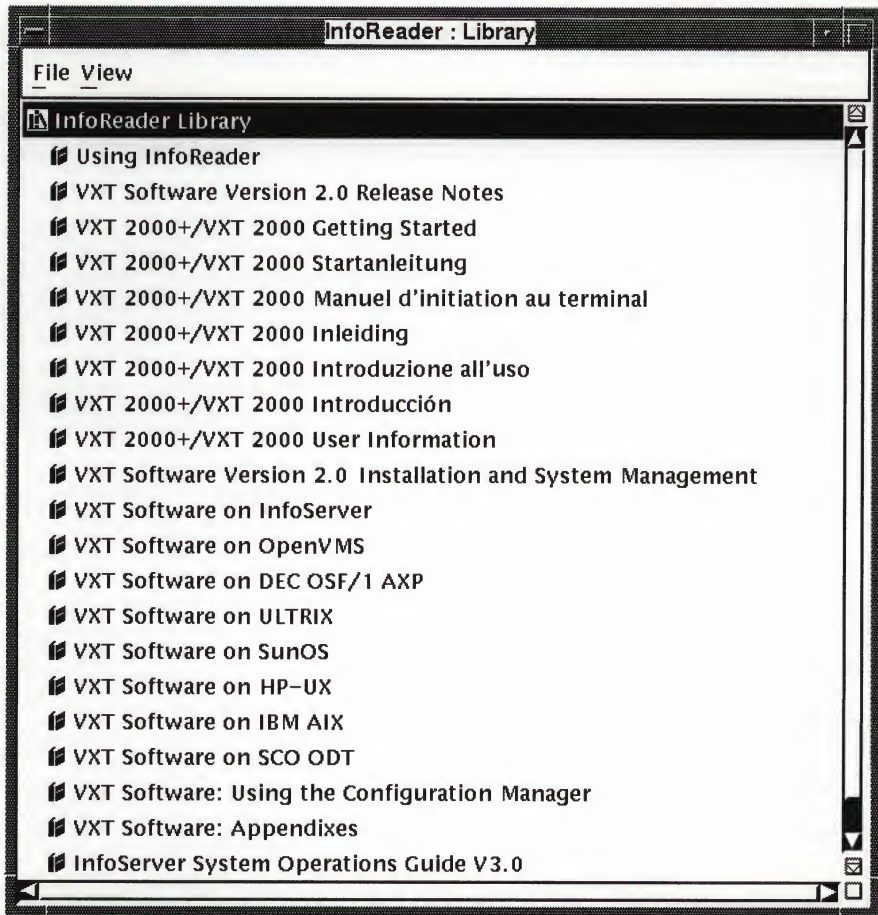
- *VXT 2000+ / VXT 2000 Windowing Terminal Getting Started* (six languages)
- *VXT 2000+ / VXT 2000 Windowing Terminal User Information*
- *VXT Software Version 2.0 Release Notes*
- *VXT Software Version 2.0 Installation and System Management*

Each section of this document is a separate online book that covers the use of VXT software on different operating systems.

- *InfoServer System Operations Guide*

## Using the Terminal

### 3.8 Getting Started Menu



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## Using VXT DECterm Windows

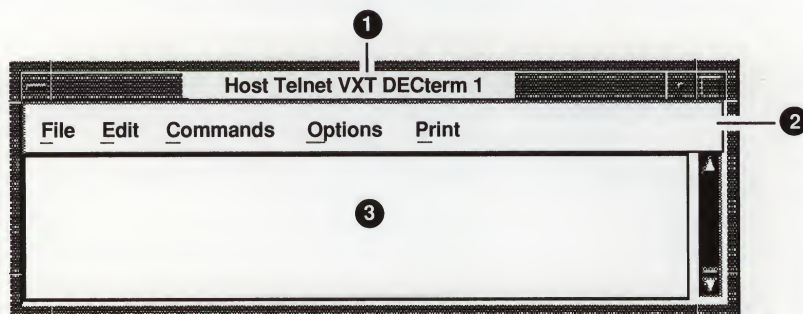
This chapter describes how to use VXT DECterm windows, also known as terminal windows. The chapter covers the following major topics:

- The VXT DECterm Window
- Copying and Pasting Text
- Clearing or Resetting the Window
- Printing the DECterm Window
- Exiting from a VXT DECterm Window

### 4.1 The VXT DECterm Window

The VXT DECterm window is a VT300 series terminal emulator. You can open several VXT DECterm windows on the screen and run different applications in each window. You can use your mouse to move between windows.

Chapter 3 describes how to create a terminal window session on your host, using the Create menu and dialog box. When you create the session, the terminal displays a VXT DECterm window.



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Chapter 2 describes the basic features of windows. For VXT DECterm windows:

- 1 The **window title** uses the following format:

*Transport VXT DECterm on Host n*

*Transport* is the method used to connect to the host system —Telnet, LAT, DECnet, or Serial. The *Host* system is identified by a host name, service name, or IP address. VXT DECterm windows are numbered sequentially (*n*) in the order you open them during a session. The name VXT DECterm lets you distinguish the terminal's DECterm windows from any remote DECterm windows you create using a host system's session manager. You can change the title by choosing the Window... menu item from the Options menu.

- 2 The **menu bar** displays the names of the five pull-down menus available from the window:

File      Edit      Commands      Options      Print

You can use your mouse or keyboard to display menus and choose menu items. To display a menu from the keyboard, press the Alt key and the key for the underlined letter in the menu name at the same time. After that, you can use the arrow keys to navigate to different menu items and menus. You choose a menu item the same way you choose a menu: Alt + underlined letter.

- 3 The **work area** is where you enter text and commands and interact with host applications, similar to a video terminal screen. By default, the size of this area is 24 lines by 80 columns. You can change the terminal size by selecting the Window... menu item from the Options menu.

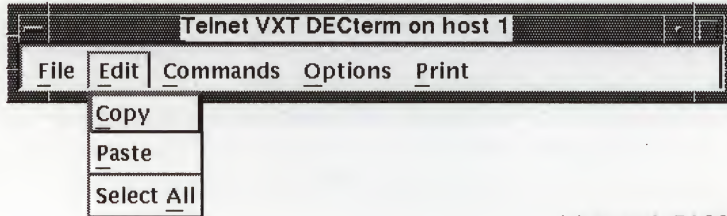
The Terminal Size setting in the Window Options dialog box should match the host system's row and page settings, to ensure the proper display of applications such as editors and mail.

## Using VXT DECterm Windows

### 4.2 Copying and Pasting Text

## 4.2 Copying and Pasting Text

You can copy and paste text in a DECterm window. You can also copy text from one window and paste the text into another window. To copy and paste text, you use the DECterm window's Edit menu. The Edit menu looks like this:



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From the Edit menu, you can perform the following functions:

#### **Copy**

Choosing this item places the currently selected text into the terminal's copy buffer. You can also use the Select All menu item to select the complete window.

#### **Paste**

Choosing this item sends the contents of the terminal's copy buffer to the cursor location in the window as if it were typed on the keyboard.

#### **Select All**

Choosing this item places all of the window's text into the terminal's copy buffer. You can also use the Copy menu item to place selected text from the window into the copy buffer.

### 4.2.1 Host Synchronization Required

To prevent loss of data when the contents of the paste buffer is sent to the host, set the host to send XON and XOFF synchronization characters as follows:

#### **On a UNIX or ULTRIX system**

```
% stty ixoff ixon
```

#### **On an OpenVMS system**

```
$ SET TERMINAL/HOSTSYNC
```

### 4.2.2 Selecting Text to Copy

You can select a word, a line, or a block of text at a time. A block can be a single character or any number of contiguous characters, up to the complete window. You can also use the Select All menu item in the Edit menu to select the complete window.

**To select a block of text:**

1. Point to the start of the block.
2. Press and hold MB1, then drag the pointer to the end of the block.
3. Release MB1 to indicate the end of the block. The selected text is highlighted.
4. In the Edit menu, click on the Copy menu item.

**To select a single word:**

1. Point to the word.
2. Double click MB1 to select the word. The selected word is highlighted.
3. In the Edit menu, click on the Copy menu item.

**To select a line of text:**

1. Point to the line.
2. Triple click MB1 to select the line. The selected line is highlighted.
3. In the Edit menu, click on the Copy menu item.

### 4.2.3 Pasting Text

After you select text and store it in the copy buffer, you can paste the text to the text cursor location in the same window or in a different window.

**To paste text:**

1. Place the text cursor where you want to copy the text.
2. Choose the Paste menu item from the Edit menu of the window that will receive the copied text. The terminal copies the text to the cursor position.



## Using VXT DECterm Windows

### 4.2 Copying and Pasting Text

#### 4.2.4 Using Quick Copy

The quick copy feature lets you paste text without storing it in the copy buffer or using the Edit menu. There are two ways to perform a quick copy:

##### **Method 1**

1. Select the text as described in Section 4.2.2.
2. Place the text cursor where you want to paste the text.
3. Press and release MB2. If you accidentally move the mouse before releasing MB2, method 2 is activated.

You can use this method to copy text from one window to another. Move the input focus to the other window before clicking MB2. To paste into remote DECterm windows, use MB3.

##### **Method 2**

1. Place the text cursor where you want to paste the text.
2. Point to the start of the text you want to copy.
3. Press and hold MB2. Drag the pointer to the end of the text to be copied. Release MB2 to copy the selected text to the cursor position.

##### **Copy and Paste Functions Disabled by Some Applications**

If you are running an application that provides support for positioning its pointer or cursor from the mouse, the copy and paste functions may not work. See your application's documentation.

#### 4.2.5 Extending Your Selected Text

After you select an area of text to copy, you may decide that you wanted to copy a larger area. Before you paste text, you can use the mouse or the arrow keys to extend the area you have selected.

##### **To extend your selection with the mouse:**

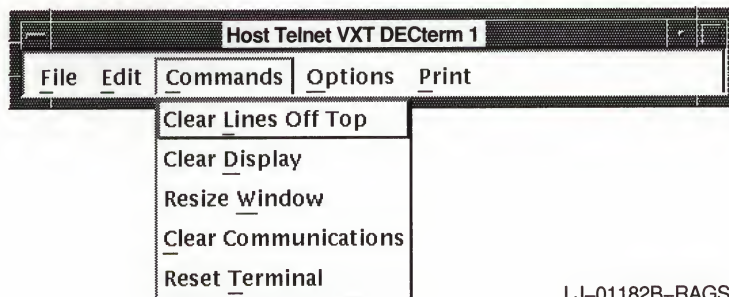
1. After selecting text with MB1, move the mouse cursor to the position that marks the boundary of the area you would like to have selected.
2. Press the **[Shift]** key and click MB1. This extends the initially selected area up to the present position of your mouse cursor.

##### **To extend your selection with the arrow keys:**

After selecting text with MB1, press the **[Shift]** key and any arrow key to extend your selected text in the direction of the arrow.

## 4.3 Clearing or Resetting the Window

The Commands menu in a VXT DECterm window lets you clear, reset, or resize the window. To display the Commands menu, click on Commands in the VXT DECterm window's menu bar. The Commands menu looks like this:



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From the Commands menu, you can perform the following functions:

### **Clear Lines Off Top**

Choosing this item clears the information stored in the transcript. The **transcript** is an area of memory that contains the last saved lines of your screen display. You can read the transcript by using the scroll bars. The transcript exists as long as the Record Lines Off Top option in the Display dialog box is enabled. To change the size of the transcript, use the Display Options dialog box from the Options menu.

### **Clear Display**

Choosing this item clears the contents of the current window.

### **Resize Window**

Choosing this item resizes the window to match the size (number of rows and columns) of your saved settings.

### **Clear Communications**

Choosing this item performs the following actions:

- Cancels any print operation in progress.
- Cancels any escape sequence, control sequence, control string, or character string processing in progress.
- Clears the keyboard buffer.
- Clears the receive buffer.

## Using VXT DECterm Windows

### 4.3 Clearing or Resetting the Window

#### **Reset Terminal**

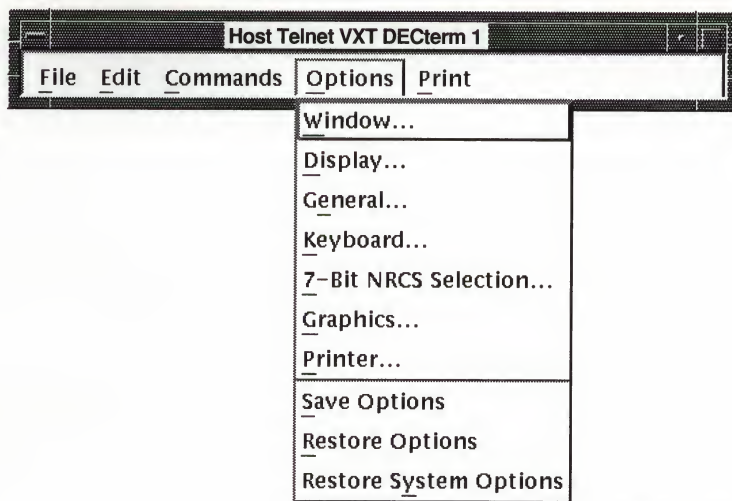
Choosing this item sets several terminal operating features to their default settings.

<b>Resets...</b>	<b>To...</b>
Color map	Default.
Cursor mode	Visible.
Insert/replace mode	Replace.
Origin mode	Upper left of window, independent of margins.
Autowrap mode	Off.
Keyboard action mode	Unlocked.
Keypad mode	Numeric.
Cursor key mode	Normal.
Top margin	Line 1.
Bottom margin	The bottom line in the window.



## 4.4 Using Options

The Options menu in a VXT DECterm window lets you customize the settings for many VXT DECterm features—from window settings to printing. Chapter 8 describes the Options menu and how to use it.



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### Note

Your VXT manager may choose to restrict your access to the Options menu or certain menu items. In this case, the items are dimmed.

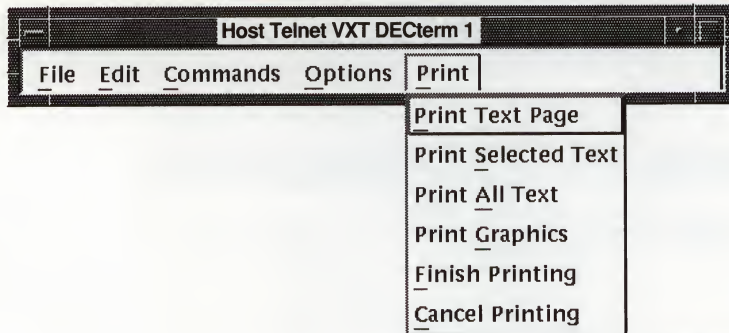
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## 4.5 Printing the DECterm Window

You can print the contents of the DECterm window on a serial or parallel printer connected to the rear of the terminal. See Section 7.2.1 to activate the serial or parallel printer port. You can print all or part of the window. You can print the window as text or sixel graphics, if your printer supports the format. To display the Print menu, click on Print in the DECterm window's menu bar. The Print menu looks like this:

## Using VXT DECterm Windows

### 4.5 Printing the DECterm Window



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From the Print menu, you can perform the following functions:

#### **Print Text Page**

This option sends the contents of the page to the printer as text. The page size is set by the Terminal Size option in the Window Options dialog box. You can choose the Window Options dialog box from the Options menu in the VXT DECterm window. The default size is 24 lines.

#### **Print Selected Text**

This option sends text you select on the screen to the printer.

#### **Print All Text**

This option sends the contents of the page and the transcript to the printer as text. The transcript contains the lines that were saved after they were scrolled off the top of the screen. You can control the number of lines saved.

#### **Print Graphics**

This option sends the contents of the page to the printer as a bitmap in sixel format.

#### **Finish Printing**

This option stops the printing upon completion of printing the current buffer.

#### **Cancel Printing**

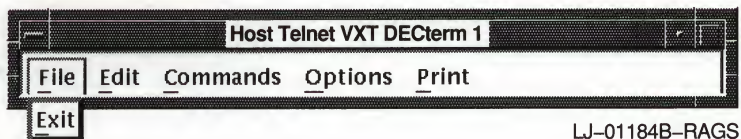
This option stops the printing immediately.

## 4.6 Exiting from a VXT DECterm Window

There are two ways to exit from a VXT DECterm window:

- Log out from the window as you normally log out from your host system. This action closes the window and stops all applications in the window.
- Click on the File menu in the Terminal Manager's menu bar and choose Exit.

This action closes the window, but may leave applications running. Depending on your operating system, you may be able to create another DECterm window and reconnect to the application.





# 5



## Customizing Windows

This chapter describes how to customize many of the window manager's features, using an Options submenu in the workspace area. The Options submenu lets you check and control the settings for many window features—from window borders and icons to the way windows become active on the screen. Initially, the features use factory-default settings that work with many host systems. You can make changes to suit your personal preference and computing environment. After you make changes, you can save your settings for all future sessions.

This chapter describes the tasks you can perform from the Options submenu:

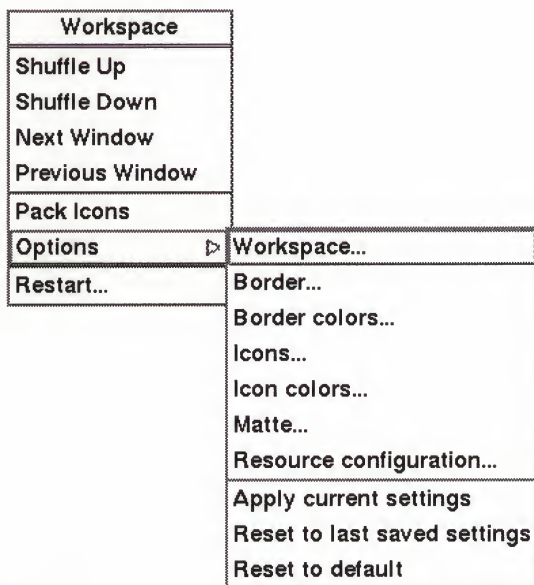
- Displaying the Options Submenu
- Saving and Restoring Window Option Settings
- Changing Your Workspace Settings
- Changing Your Border Settings
- Changing Your Border Color Settings
- Changing Your Icon Settings
- Changing Your Icon Color Settings
- Changing Your Matte Settings
- Changing Menu, Button, and Key Bindings
- Launching Sessions and VXT Applications

The chapter describes how to use the Options submenu from the workspace area. You can also display the Options submenu from the window menu button. Display the window menu and choose the Workspace menu item. Then choose the Options menu item from the Workspace submenu.

## 5.1 Displaying the Options Submenu

To display the Options submenu:

1. Click and hold MB1 anywhere on the screen's workspace. The workspace submenu is displayed.
2. Drag the pointer down to the Options menu item. The Options submenu is displayed.
3. Release MB1.



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### Note

A system manager can lock or unlock settings in the Options submenu by using the terminal's configuration manager. If the settings are locked, the Options menu item is dimmed and you cannot view the Options submenu. See your system manager.

---

When you choose a menu item from the Options submenu, the dialog box for that item is displayed. Shaded buttons in the dialog box indicate current settings. You can examine the settings and change them if desired.

## Customizing Windows

### 5.2 Saving and Restoring Window Option Settings

## 5.2 Saving and Restoring Window Option Settings

To make changes to window settings and save them:

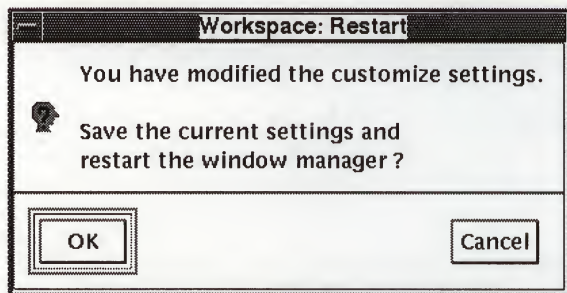
1. Make your changes in a dialog box, then click on the OK button.
2. Click on the Restart... menu item in the Workspace submenu.

or

Click on the Apply current settings menu item in the Options submenu.

3. The terminal displays a box to confirm that you want to apply the current settings and restart the window manager.

For example, if you modify your window settings, and click on the Restart... menu item, the terminal displays the following box:



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Click on the OK button to close the confirmation box, save changes, and restart the window manager.

To cancel the restart operation, click on the Cancel button. The Cancel button closes the restart confirmation box without restarting the window manager.



## Customizing Windows

### 5.2 Saving and Restoring Window Option Settings

#### Making Changes in a Dialog Box

Each dialog box displayed from the Options submenu has a set of control push buttons:

Click on...	To...
OK	Record new settings temporarily and dismiss the dialog box.
Reset	Display the currently saved settings.
Default	Restore the factory-default settings.
Cancel	Dismiss the dialog box without changing any settings.

If you make changes, you must use the **Apply current settings** or **Restart...** menu item to save your settings for future sessions.

#### Saving or Restoring Option Settings

To save or restore settings, use the following menu items on the Options submenu of the window menu:

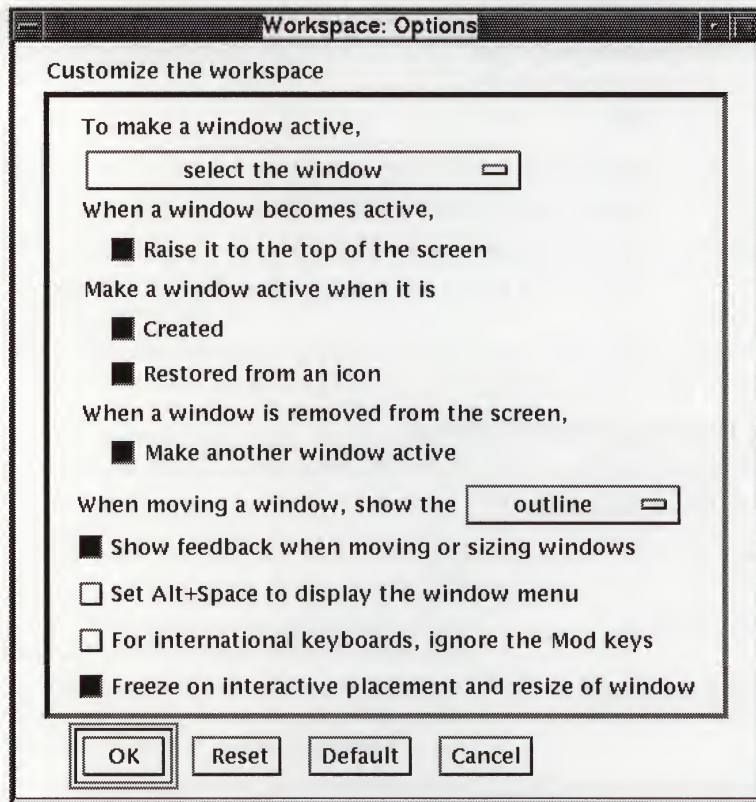
Choose...	To...
Apply current settings	Apply new settings and save them. You can also use the <b>Reset...</b> menu item on the <b>Workspace</b> submenu.
Reset to last saved settings	Restores the last settings you saved. Choose this menu item if you want to reset any features that you changed temporarily, but do not want to save.
Reset to default	Restore the factory-default settings.

### 5.3 Changing Your Workspace Settings

You can change how and when windows become active in your workspace. You can also show an entire window while it is moving instead of just the window outline. To change these and other workspace settings, click anywhere on the screen's workspace to display the **Workspace** submenu. Choose the **Options** submenu, then choose **Workspace...** to display the **Workspace: Options** dialog box.

## Customizing Windows

### 5.3 Changing Your Workspace Settings



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From the Workspace: Options dialog box, you can change any of the following settings:

☐ **To make a window active,**

Normally, a window becomes active when you select it with your mouse or keyboard. If desired, you can have windows become active as soon as you move the pointer into them. To do this, click on the **select the window** button and choose **move the pointer into the window** from the pop-up menu.

If you use the pointer to make windows active, you cannot use the **Alt Tab** and **Alt F11** keyboard navigation sequences to move the input focus among windows.

☐ **When a window becomes active,**

Normally, a window is raised to the top of the stack on the screen when activated. Click on the button if you want to turn this feature off.

## Customizing Windows

### 5.3 Changing Your Workspace Settings

☐ **Make a window active when it is created or restored from an icon**

Normally, a window becomes active when it is created or restored from an icon. Click on the appropriate button if you want to change the current settings.

☐ **When a window is removed from the screen,**

Normally when you remove a window from the screen, another window becomes active. Click on the button if you do not want another window to become active.

☐ **When moving a window, show the outline or entire window.**

Normally when you move windows, only the window outline appears. If you want to display the entire window while it is moving, click on the **outline** button and choose **entire window** from the pop-up menu.

☐ **Show feedback when moving or sizing windows**

Normally when you move or size a window, a box appears in the center of the screen. For moving, the box provides a horizontal and vertical screen coordinate position. For sizing, the box provides a horizontal and vertical size. Click on the button if you do not want the box to appear. Turning off the box can improve performance.

☐ **Set Alt+Space to display the window menu**

If you choose this feature, you can press the **Alt** key and space bar to display the window menu. This is an alternative to the window menu button.

☐ **For international keyboards, ignore the Mod keys**

If you choose this feature, the terminal ignores modifier keys such as the **Ctrl** key.

☐ **Freeze on interactive placement and resize of window**

Normally when you move a window, its frame appears solid on the background. To change to a flickering frame, click on the button.

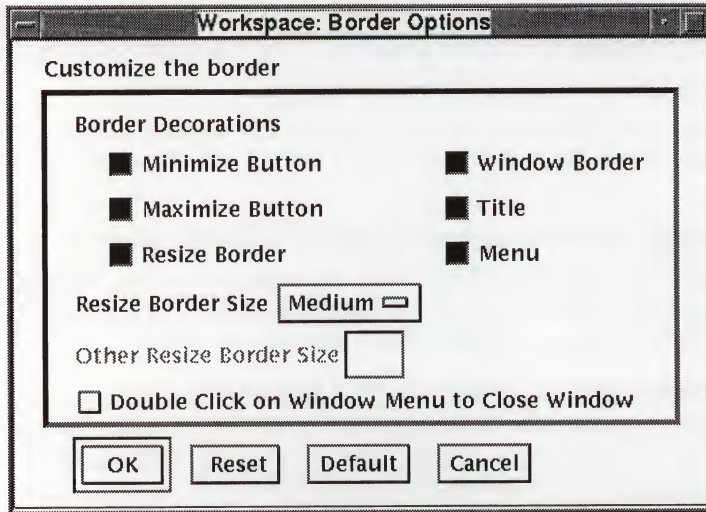
## 5.4 Changing Your Border Settings

You can change the features of your window border to include or exclude minimize and maximize buttons, borders, a title, or menus. You can also change the size of borders. To change your border settings, click anywhere on the screen's workspace to display the Workspace submenu. Choose the Options submenu, then choose Border... to display the Workspace: Border Options dialog box.



## Customizing Windows

### 5.4 Changing Your Border Settings



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From the Workspace: Border Options dialog box, you can change any of the following settings:

#### ☐ **Border Decorations**

You can add or remove border decorations and buttons from all of your window frames. To change the current setting for a border decoration, click on its button.

#### ☐ **Resize Border Size**

The **resize border** is the part of the window frame that you drag to resize a window. To change the thickness of the border, click on the button in the Resize Border Size box and make a choice from the pop-up menu. If you choose Other, you can enter a specific size in the Other Resize Border Size box.

#### ☐ **Other Resize Border Size**

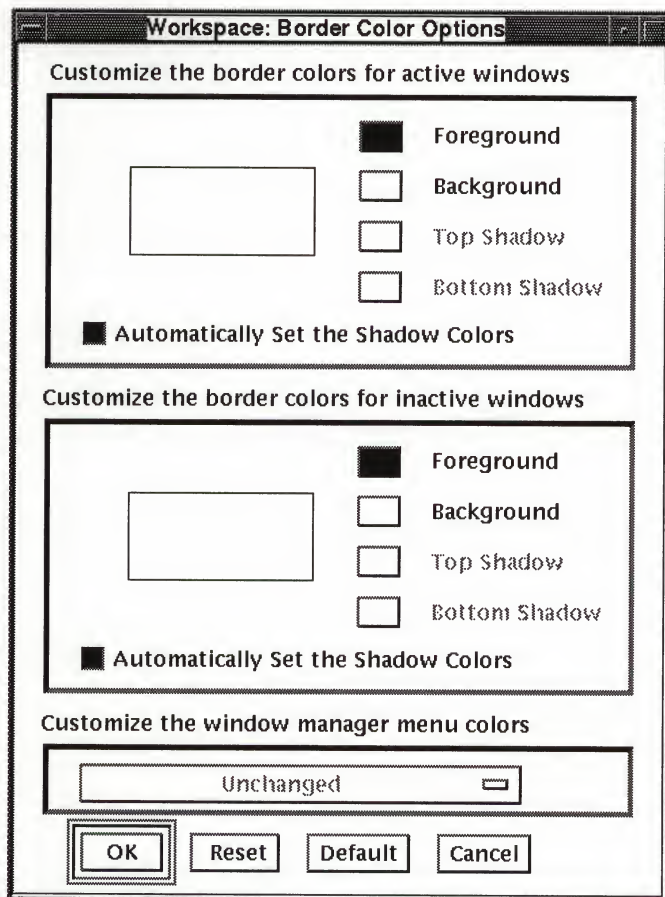
If you choose Other from the pop-up menu in the Resize Border Size box, you can enter a border width from 0 to 999 in the Other Resize Border Size box.

#### ☐ **Double Click on Window Menu to Close Window**

When this setting is enabled, a window will close when you double click on the window menu button.

## 5.5 Changing Your Border Color Settings

You can choose distinct colors for active and inactive windows, to make it easy to see which window is active. To change your border color settings, click anywhere on the screen's workspace to display the Workspace submenu. Choose the Options submenu, then choose Border Colors... to display the Workspace: Border Color Options dialog box.



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From the Workspace: Border Color Options dialog box, you can change any of the following settings for active or inactive windows:

## Customizing Windows

### 5.5 Changing Your Border Color Settings

#### On Gray Scale and Color Systems

##### ☐ **Foreground**

The Foreground button lets you change the foreground color of the window's title. When you click on the button, the window manager displays a Color Mixing dialog box (Appendix B).

##### ☐ **Background**

The Background button lets you change the color behind the title. When you click on the button, the window manager displays a Color Mixing dialog box.

##### ☐ **Top Shadow**

The Top Shadow button lets you change the color on the top and left sides of the border. The top and bottom shadow colors create the three-dimensional effect of the window display, so it is important to use well-matched colors. If the Automatically Set the Shadow Colors button is on, the terminal automatically chooses the top and bottom shadow colors when you change the background color.

To choose your own top shadow color, first turn off the automatic button. Then click on the Top Shadow button to display the Color Mixing dialog box. You should use the HLS model in the dialog box to choose a color that is lighter and less saturated than the bottom shadow color.

##### ☐ **Bottom Shadow**

The Bottom Shadow button works like the Top Shadow button, but changes the color on the bottom and right sides of the border.

##### ☐ **Customize the window manager menu colors**

This button lets you change the colors of the window manager menu. Click on the button to display a pop-up menu of choices.

#### On Monochrome Systems

The Color Mixing dialog box is not displayed on monochrome systems. To change the foreground, background, or shadow colors, click on the appropriate button.

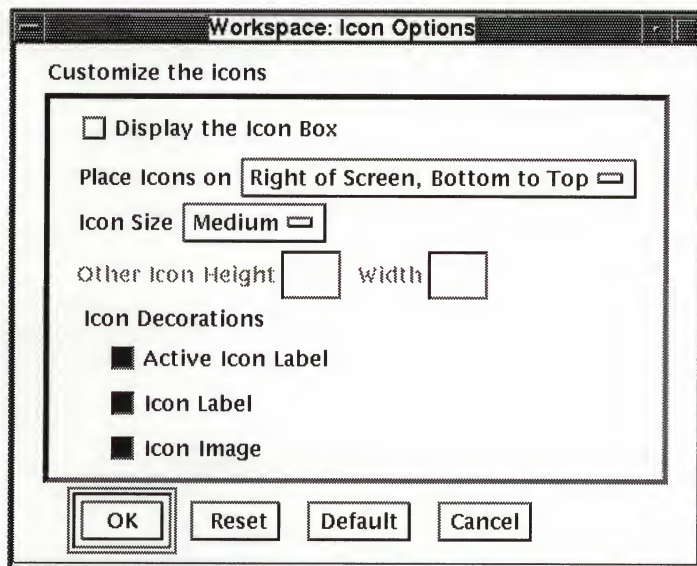
## 5.6 Changing Your Icon Settings

You can customize the size, placement, and use of labels and images for your window icons. To change your icon settings, click anywhere on the screen's workspace to display the Workspace submenu. Choose the Options submenu, then choose Icons... to display the Workspace: Icon Options dialog box.



## Customizing Windows

### 5.6 Changing Your Icon Settings



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From the Workspace: Icon Options dialog box, you can change any of the following settings:

#### ☐ **Display the Icon Box**

Click on the Display the Icon Box button to turn the display of an icon box on or off. The icon box contains the window icons of each session and application running on the terminal.

You can save changes to the size or location of the icon box for future sessions. To do this, click on the Apply current settings menu item in the Options submenu, then click on the Restart... menu item to restart the window manager (Section 5.1).

#### ☐ **Place Icons on**

This button lets you choose the location and direction for placing icons on the screen. Click on the button to display a pop-up menu of choices.

#### ☐ **Icon Size**

The Icon Size button lets you choose the size of the icons. Click on the button to display a pop-up menu of choices. If you choose Other, you can enter a specific size in the Other Icon Height and Width boxes.

## Customizing Windows

### 5.6 Changing Your Icon Settings

#### ☐ Other Icon Height and Width

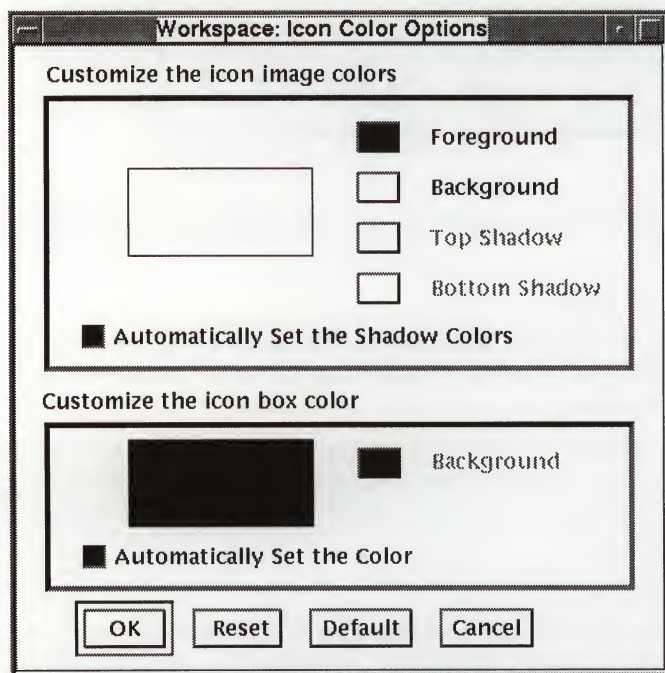
If you choose Other from the Icon Size pop-up menu, you can enter a value from 0 to 999 in the Other Icon Height and Width boxes.

#### ☐ Icon Decorations

To turn the use of icon labels and images on or off, click on the appropriate button.

## 5.7 Changing Your Icon Color Settings

You can customize the colors for icon images and boxes. To change your icon color settings, click anywhere on the screen's workspace to display the Workspace submenu. Choose the Options submenu, then choose Icon Colors... to display Workspace: Icon Color Options dialog box.



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From the Workspace: Icon Color Options dialog box, you can change any of the following settings:

### **On Gray Scale and Color Terminals**

#### **– Customize the icon image colors –**

##### ☐ **Foreground**

The Foreground button lets you change the color of the icon's title. To change the color, click on the Foreground button to display the Color Mixing dialog box (Appendix B).

##### ☐ **Background**

The Background button lets you change the color behind the icon's title. To change the color, click on the Background button to display the Color Mixing dialog box.

##### ☐ **Top Shadow**

The Top Shadow button lets you change the color on the top and left of the icon border. The top and bottom shadow colors create the three-dimensional effect of the icon display, so it is important to use well-matched colors. If the Automatically Set the Shadow Colors button is on, the terminal automatically chooses the top and bottom shadow colors when you change the background color.

To choose your own top shadow color, first turn off the automatic button. Then click on the Top Shadow button to display the Color Mixing dialog box. You should use the HLS model in the dialog box to choose a color that is lighter and less saturated than the bottom shadow color.

##### ☐ **Bottom Shadow**

The Bottom Shadow button works like the Top Shadow button, but changes the color on the bottom and right of the icon border.

#### **– Customize the icon box color –**

##### ☐ **Background**

Normally, the background color of the icon box is set automatically. To change the color, turn off the Automatically Set the Color button and click on the Background button to display the Color Mixing dialog box.

### **On Monochrome Terminals**

The Color Mixing dialog box is not displayed on monochrome terminals. To change the foreground, background, or shadow colors, click on the appropriate button.

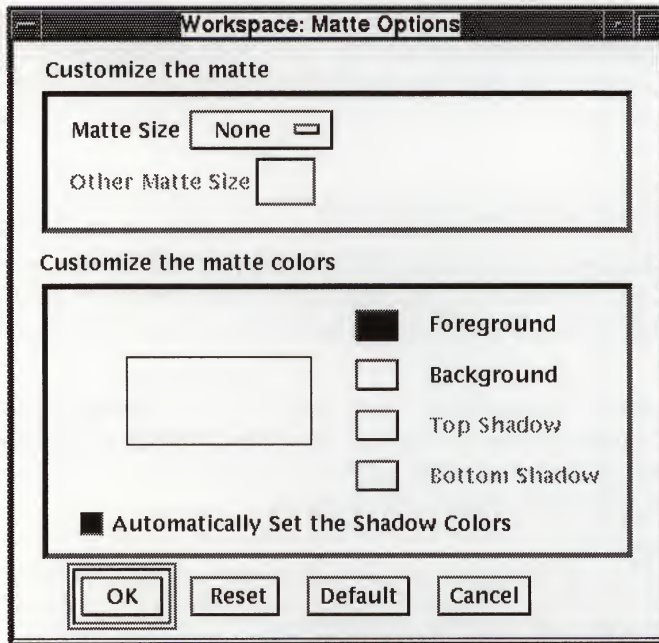


## Customizing Windows

### 5.8 Changing Your Matte Settings

## 5.8 Changing Your Matte Settings

You can add an optional matte frame between the window border and the work area. You can control the matte's size and colors. To create a matte or change your matte settings, click anywhere on the screen's workspace to display the Workspace submenu. Choose the Options submenu, then choose Matte... to display the Workspace: Matte Options dialog box.



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From the Workspace: Matte Options dialog box, you can change any of the following settings:

#### On Gray Scale and Color Terminals

##### **– Customize the matte –**

##### ☐ **Matte Size, Other Matte Size**

The Matte Size button lets you change the size of the matte. To change the size, click on the button and make a choice from the pop-up menu. To turn off the matte, choose None. To enter your own size, choose Other, then click on the Other Matte Size box and enter a size.

**– Customize the matte colors –**

☐ **Foreground**

To change the matte's foreground color, click on the Foreground button to display the Color Mixing dialog box (Appendix B).

☐ **Background**

To change the color behind the matte's title, click on the Background button to display the Color Mixing dialog box.

☐ **Top Shadow**

The Top Shadow button lets you change the color on the top and left of the matte. The top and bottom shadow colors create the three-dimensional effect, so it is important to use well-matched colors. If the Automatically Set the Shadow Colors button is on, the terminal automatically chooses the top and bottom shadow colors when you change the background color.

To choose your own top shadow color, first turn off the automatic button. Then click on the Top Shadow button to display the Color Mixing dialog box. You should use the HLS model in the dialog box to choose a color that is lighter and less saturated than the bottom shadow color.

☐ **Bottom Shadow**

The Bottom Shadow button works like the Top Shadow button, but selects the color on the bottom and right of the matte.

**On Monochrome Terminals**

The Color Mixing dialog box is not displayed on monochrome terminals. To change the foreground, background, or shadow colors, click on the appropriate button.

## **5.9 Changing Menu, Button, and Key Bindings**

---

**Caution**

---

This topic is for advanced users who have a thorough understanding of the information discussed in the *OSF/Motif Programmers Guide*. Changing menu, button, or key bindings could remove needed functions from menus and may disable your ability to use the window manager.

For example, if you edit a menu or binding and leave a blank line when you remove a function, the items below the blank line will not work or may not appear on the menu following a restart.

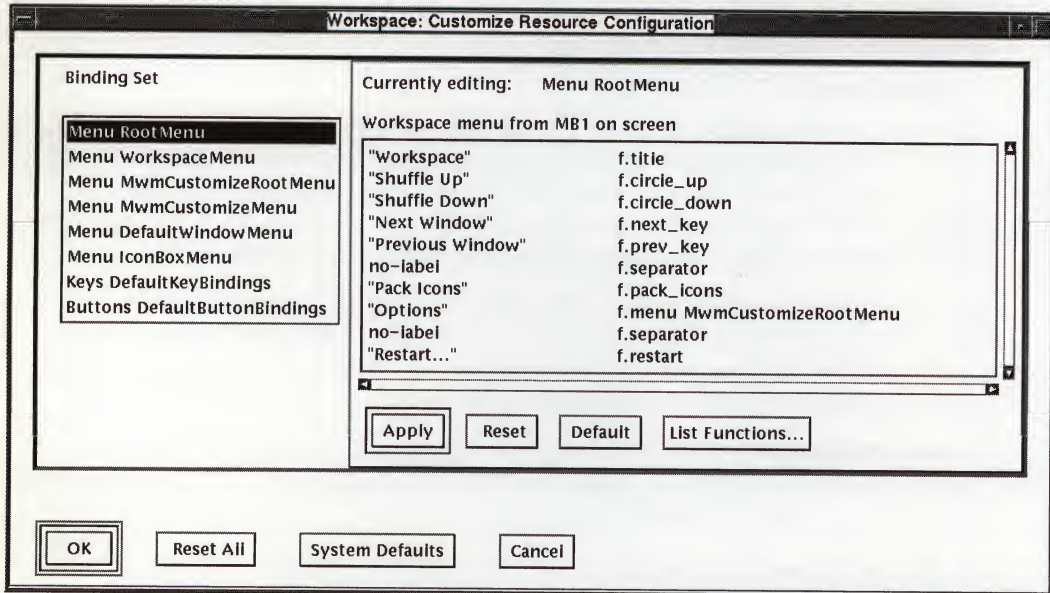
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## Customizing Windows

### 5.9 Changing Menu, Button, and Key Bindings

You can modify six of the window manager's menus and the functional bindings for certain buttons and keys.

To change your bindings, click anywhere on the screen's workspace to display the Workspace submenu. Choose the Options submenu, then choose Resource... to display the Workspace: Customize Resource Configuration dialog box.



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#### ☐ Binding Set

The Workspace: Customize Resource Configuration dialog box contains a list of six menu binding sets, one keyboard key binding set, and one mouse button binding set. When you click on a binding set in the list, the bindings for that set are displayed in the scroll box to the right of the list. The name of the set is displayed in the **Currently editing:** field.

Here is what each binding sets does:



## Customizing Windows

### 5.9 Changing Menu, Button, and Key Bindings

Click on...	To modify...
Menu RootMenu	The Workspace menu accessed by clicking MB1 in an open space.
Menu WorkspaceMenu	The Workspace submenu accessed from the window menu.
Menu MwmCustomizeRootMenu	The Options submenu accessed from the Workspace submenu.
Menu MwmCustomizeMenu	The Options submenu accessed from the window menu.
Menu DefaultWindowMenu	The window menu accessed from the window menu button.
Menu IconBoxMenu	The Icon Box menu.
Keys DefaultKeyBindings	Keyboard keys associated with window management functions.
Buttons DefaultButtonBindings	Mouse button actions associated with window management functions.

#### Push Button Controls

Below the scroll box are push buttons to control the editing process:

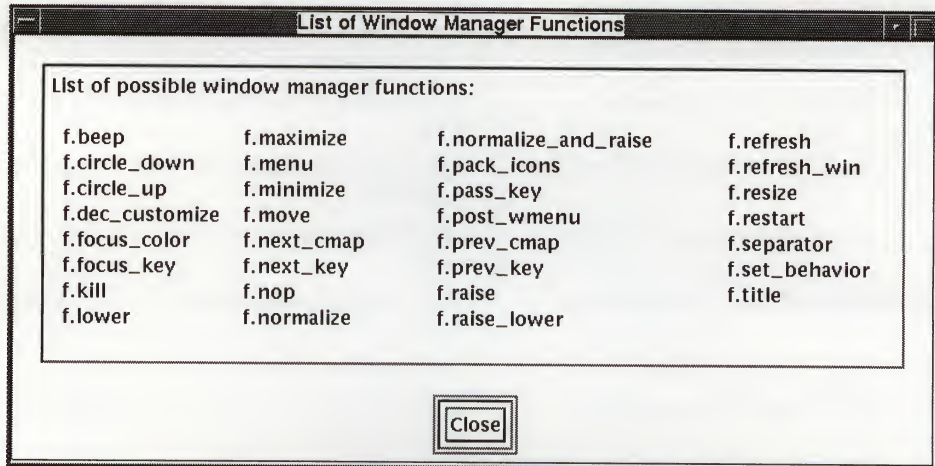
Choose...	To...
Apply	Record the setting of the currently edited binding set.
Reset	Redisplay the current settings for the currently edited binding set, if you changed the setting without applying them.
Default	Restore the factory-default settings for the currently edited binding set.
List Window Manager Functions...	Display a list of supported window manager functions.

#### To display window manager functions:

To display the List of Window Manager Functions dialog box, click on the List Window Manager Functions... button in the Customize Resource Configuration dialog box. From this list, you can select and copy functions into the binding set you are editing in the scroll box. For descriptions of the window manager functions, see the *OSF/Motif Programmers Guide*.

## Customizing Windows

### 5.9 Changing Menu, Button, and Key Bindings



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#### To change or add to a menu binding:

1. Click on a menu binding set in the Workspace: Customize Resource Configuration dialog box. The functions for the menu appear in the scroll box.
2. **To make changes:** Enter changes from your keyboard or use your mouse to copy a new binding from the List of Window Manager Functions.

**To add functions to the binding:** Click to the right of the last function listed in the scroll box, then press **[Return]**.

Each menu item entry has the following syntax:

```
item [mnemonic] [accelerator] function [argument]
```

The mnemonic and accelerator are optional. The function is the action the window manager takes when a user chooses the menu item. Some functions may require arguments.

The window manager treats blank lines as the end of the menu binding set. To remove blank lines, use the **<X>** key or **←Backspace** key.

3. Click on Apply.
4. Click on OK.

**To change or add to a key binding:**

1. Click on the Keys DefaultKeyBindings binding set. The functions for certain keyboard keys are displayed in the scroll box.
2. **To make changes:** Enter changes from your keyboard or use your mouse to copy a new binding from the List of Window Manager Functions.

**To add functions to the binding:** Click to the right of the last function listed in the scroll box, then press Return.

Each key binding has the following syntax:

```
key context[|context] function [argument]
```

Each line identifies a unique key sequence, one or more contexts in which the sequence is valid, and the function of the sequence. The context indicates where the keyboard input focus must be when keys are pressed, in order for the sequence to work: window, icon, or root. The function is the action the window manager takes when a user chooses the menu item. Some functions may require arguments.

The window manager treats blank lines as the end of the key binding set. To remove blank lines, use the <X key or ←Backspace key.

3. Click on Apply.
4. Click on OK.

**To change or add to a button binding:**

1. Click on the Buttons DefaultButtonBindings binding set. The functions for the buttons are displayed in the scroll box.
2. **To make changes:** Enter changes from your keyboard or use your mouse to copy a new binding from the List of Window Manager Functions.

**To add functions to the binding:** Click to the right of the last function listed in the scroll box, then press Return.

Each button binding has the following syntax:

```
button context[|context] function [argument]
```

Each line identifies a certain button action, one or more contexts in which the button action is valid, and the function to perform. The context indicates where the pointer must be for the button action to work: window, root, frame, icon, title, or border. The function is the action the window manager takes when a user chooses the menu item. Some functions may require arguments.



## Customizing Windows

### 5.9 Changing Menu, Button, and Key Bindings

The window manager treats blank lines as the end of the button binding set. To remove blank lines, use the `<X>` key or `[←Backspace]` key.

3. Click on Apply.
4. Click on OK.

#### To save settings:

To save the settings in the Workspace: Customize Resource Configuration dialog box, use the push buttons at the bottom of the dialog box.

Choose...	To...
OK	Record new settings and dismiss the dialog box.
Reset All	Redisplay the current settings for the entire dialog box if you changed settings without applying them.
System Defaults	Restore the factory-default settings for the entire dialog box.
Cancel	Dismiss the dialog box without changing any settings. If you made changes without applying them, clicking on Cancel button cancels those changes.

## 5.10 Launching Sessions and VXT Applications

**Application launching** refers to starting sessions or local VXT applications. Normally, you start sessions and applications from the Terminal Manager window by using

- The Create dialog box, Create menu, or VXT Create pop-up menu
- The Customize AutoStart dialog box or AutoStart menu item

You can also define keys, mouse buttons, or menu items to launch sessions or VXT applications. Section 5.9 describes how to define menu, mouse button, and key functions for the window manager. This section lists the functions and arguments you can use to launch sessions and VXT applications.

#### Application Functions and Arguments

Table 5-1 lists application names and arguments you can use when defining menu items, mouse buttons, or keys to launch sessions or applications.

You cannot launch the configuration manager application.

## Customizing Windows

### 5.10 Launching Sessions and VXT Applications

**Table 5-1 Launching Applications—Names and Arguments**

Application	Arguments	Description
x	[-ip, -lat, or -dnet] <i>host</i>	X session
decterm	[-ip, -lat, or -dnet] <i>host</i>	DECterm window
mwm	none	Motif window manager
term_mgr	[-msgbox]	Terminal Manager window [and VXT Message Box]
msgbox	none	VXT Message Box
font_mgr	none	Font manager
3270	[-dnet]	VXT 3270 window

[ ] indicates an optional argument. Choices are separated by commas.

IP is the default transport for DECterm and X applications.

DECnet is the default transport for the 3270 application.

### Examples

Table 5-2 provides examples of how to launch each application, using different arguments.

**Table 5-2 Launching Applications—Examples**

To Create...	Use...
A TCP/IP X session on host Art	x -ip art
A LAT X session on host Art	x -lat art
A DECnet X session on host Art	x -dnet art
A TCP/IP DECterm window on host Art	decterm -ip art
A LAT DECterm window on host Art	-lat art
A DECnet DECterm window on host Art	-dnet art
A serial DECterm window on host Art	decterm -serial art
A local Motif window manager	mwm
A Terminal Manager window	term_mgr
A Terminal Manager window and VXT Message Box	term_mgr -msgbox
A VXT Message Box	msgbox

(continued on next page)

## Customizing Windows

### 5.10 Launching Sessions and VXT Applications

**Table 5-2 (Cont.) Launching Applications—Examples**

To Create...	Use...
A font manager	font_mgr
A DECnet VXT 3270 terminal window	3270 -dnet

#### Defining Keys: Example

The following example shows how to define keys to launch an application. The example defines **F9** to create a LAT DECterm window, **F10** to create an IP X session, and key to iconify the active window.

1. Click anywhere on the screen background to display the Workspace submenu.
2. Choose the Options submenu.
3. Choose Resource... to display the Workspace: Customize Resource Configuration box.
4. Click on the Keys DefaultKeyBindings Binding Set.
5. Enter the following new key bindings at the bottom of the list.

```
<Key>F9          root>window      f.exec "decterm -lat host"
<Key>F10         root>window      f.exec "x -ip host"
<Key>F11         root>window      f.minimize
```

For *host*, enter the name of the host you want to connect to.

6. Click on OK in the Customize Resource Configuration box.
7. Click on Restart... in the Workspace submenu.
8. Press **F9** to create a LAT DECterm window on the host you specified.
9. Press **F10** to create an IP X session on the host you specified.
10. Press **F11** key to iconify the active window.





## 6

# Customizing the Terminal

This chapter describes how you can customize basic terminal feature settings, using the top half of the Customize menu in the Terminal Manager window. The chapter also describes how to customize the VXT Message Box.

Initially, the features use factory-default settings that work with many host systems. You can make changes to suit your personal preference and computing environment. After you make changes, you can save your settings for all future sessions.

The chapter covers the following major topics:

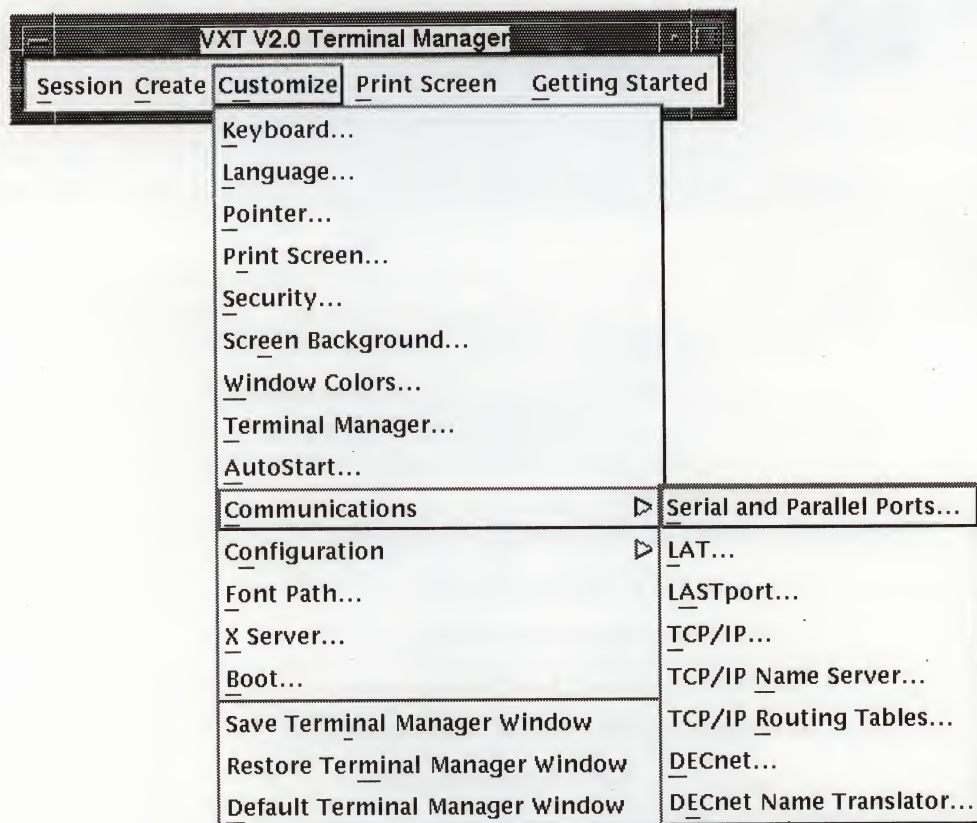
- Displaying the Customize Menu
- Changing Your Keyboard Settings
- Choosing the Display Language
- Changing Your Pointer and Mouse Settings
- Changing Your Print Screen Settings
- Changing Your Security Settings
- Changing Your Screen Background
- Changing Your Window Colors
- Changing Your Terminal Manager Settings
- Specifying Your AutoStart Settings
- Changing Your Video Alignment Settings (VX227 Models)
- Saving the Terminal Manager Window's Position and Size
- Customizing the VXT Message Box

## Customizing the Terminal

### 6.1 Displaying the Customize Menu

#### 6.1 Displaying the Customize Menu

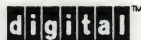
To display the Customize menu, click on Customize in the Terminal Manager window's menu bar. The Customize menu looks like this:



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#### Note

A system manager can customize settings for terminals and work groups. The system manager can also lock or unlock access to one or more of the Customize menu items. Locked menu items are dimmed.



## VXT 2000+/VXT 2000 Windowing Terminal

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### Release Notes

This document provides updated information for installing and using VXT 2000+ and VXT 2000 windowing terminals that come with a system box.

### Installing the Cable for a Gray Scale or Color Monitor

When you connect the monitor cable to the system box, ensure that pin A1 is on the left. The DIGITAL logo on the cable should face downward.

### Software Requirements for VXT 2000+ Terminals

VXT 2000+ windowing terminals require VXT Version 1.3 or later software to operate. Before turning on your terminal, make sure VXT Version 1.3 or later software is available on your network. The VXT 2000+ terminal will not load earlier VXT software versions.

Some networks may have multiple versions of VXT software available. If the default version on your network is earlier than VXT Version 1.3 software, you may need to customize the VXT 2000+ terminal to load VXT Version 1.3 or later software. Check with your system manager.

You can specify a VXT software version by entering a BOOT command at the terminal's >>> prompt or by using the terminal's Customize Boot dialog box. See Section 7.6 in your *VXT 2000+/VXT 2000 Windowing Terminal User Information* guide.

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## System Box and Monitor Part Numbers

There are six system box models for VXT 2000+/VXT 2000 terminals, matched to eight monitors. Each of the six system boxes includes an Ethernet card with two connectors—thickwire and ThinWire, or thickwire and twisted pair.

To verify the type of monitor and system box you have, look at the label on the back of your unit. The following table shows which monitors can be used with each system box:

Monitor		System Box	
Size and Type	Model	Thickwire and ThinWire	Thickwire and Twisted Pair
19-inch monochrome	VR319-DA or D4	VX20A-CC	VX20A-DC
15-inch color	VR326-DA, D4, or HA PCXBV-BC or BD	VX20A-EB	VX20A-FB
17-inch color	VRC16-HA or H4	VX20A-EB	VX20A-FB
19-inch color	VR320-DA, D4, or HA VRT19-HA or H4	VX20A-EA	VX20A-FA
17-inch gray scale	VRM17-HA or H4	VX20A-EA	VX20A-FA
19-inch gray scale	VR319-DA or D4	VX20A-EA	VX20A-FA

## VXT Software Release Notes

Each VXT software kit provides online release notes that you can print. The software release notes include corrections and updates to information described in your *VXT 2000+/VXT 2000 Windowing Terminal User Information* guide.

Digital strongly recommends that you review the release notes.

**For ULTRIX, DEC OSF/1 AXP, and other UNIX systems:** See your system manager for the name and location of the file for VXT software release notes.

**For OpenVMS systems:** A text version and PostScript version of the release notes are available in the SYS\$HELP directory:

VXT020.RELEASE_NOTES	Text version
VXT020_RELEASE_NOTES.PS	PostScript version

When you choose a menu item from the Customize menu, the terminal displays a dialog box with the feature settings for that topic. The Communications menu item displays a submenu that leads to a set of dialog boxes. In dialog boxes, shaded buttons indicate the current settings. You can examine the settings and change them if desired. You can use the last three menu items to save and restore the Terminal Manager window's position and size.

## 6.2 Saving and Restoring Terminal Manager Settings

Each dialog box has a set of push buttons for saving and restoring settings. After you make changes in a dialog box, you can save your settings for future sessions by clicking on the OK button or Apply button. If you do not want to save your changes, click on the Cancel button. Some new settings do not take effect until you end your current session and begin another one.

Click on ...	To ...
OK	Apply and save new settings and dismiss the dialog box.
Apply	Apply and save new settings without dismissing the dialog box.
System Defaults	Apply and save the factory-default settings, clearing all text and scroll boxes.  If your terminal is in a work group, clicking on the System Defaults button applies and saves the work group's customized settings.
Cancel	Dismiss the dialog box without changing any settings. If you made any changes without applying them, clicking on the Cancel push button cancels those changes.

## 6.3 Changing Your Keyboard Settings

You can control general keyboard settings from the Terminal Manager window, such as your keyboard type and keyclick volume. The keyboard type setting should match the keyboard you are using. To view or change your keyboard settings, choose Keyboard... from the Terminal Manager window's Customize menu. The Customize Keyboard dialog box looks like this:

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### Note

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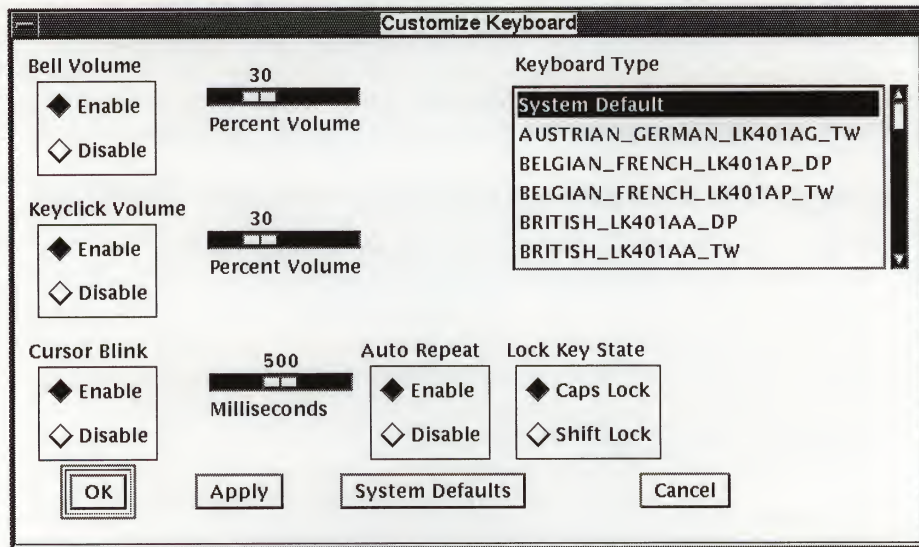
You can also customize some keyboard settings for individual VXT DECterm windows. See Chapter 4.

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## Customizing the Terminal

### 6.3 Changing Your Keyboard Settings



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From the Customize Keyboard dialog box, you can change any of the following settings:

#### ☐ Keyboard Type

The keyboard comes in various models for different languages and dialects. The location of some keyboard characters varies, depending on the keyboard model. Make sure the Keyboard Type setting in the dialog box matches your keyboard model number, so the system will send the correct characters when you use the keyboard.

The System Default setting is the North American model of your standard (LK401), short UNIX style (LK421), or PC style (LK443 or LK444) keyboard. If you are using a keyboard for another language or dialect, you must choose the matching keyboard type.

**To find your keyboard model number:** Look on the bottom of the keyboard for the label that specifies the model number. The model number should be in a format similar to LK4nn-xx or nn-nnnnn-xx. Use the xx value to choose your keyboard type from the Keyboard Type scroll box.

For example, if you have a British keyboard and the model number is LK401-AA, you choose British\_LK401AA\_TW or British\_LK401AA\_DP.



#### **Typewriter (TW) or data processing (DP) keys**

You also use the keyboard type setting to specify whether you want your keyboard to act as a typewriter (TW) or data processing (DP) keyboard. This setting affects keys with three or more characters. If you choose data processing, these keys send the characters on the right half of their keycaps. If you choose the typewriter setting, these keys send the characters on the left half of their keycaps.

Typewriter and data processing settings are identical for these keyboard types:

- North American and Dutch
- When using 8-bit multinational characters: British, German, and Portuguese

**When using DECwindows:** The DECwindows host session manager has a similar customize option. Digital recommends that you leave the host setting at System Default to avoid having the host session manager and local terminal manager compete to set the keyboard.

#### ☐ **Bell Volume**

The keyboard's warning bell alerts you to system messages. To adjust the bell volume, either drag the Percent Volume slider to the right or left, or point to a new location on the scale and click MB1. To disable the bell, click on the Disable button.

#### ☐ **Keyclick Volume**

When you press a keyboard key, the keyboard makes a clicking sound. To adjust the keyclick volume, either drag the Percent Volume slider to the right or left, or point to a new location on the scale and click MB1. To disable keyclicks, click on the Disable button.

#### ☐ **Cursor Blink**

Normally, the text input cursor blinks. To adjust the rate of blinking, either drag the Milliseconds slider to the right or left, or point to a new location on the scale and click MB1. To disable blinking, click on the Disable button. Your new setting takes effect when you restart the terminal.

VXT DECterm windows also have a Cursor Blink feature, controlling the text cursor in the VXT DECterm terminal window. The Cursor Blink setting in the Customize Keyboard dialog box has no effect on the VXT DECterm Cursor Blink setting.

## Customizing the Terminal

### 6.3 Changing Your Keyboard Settings

#### ☐ Auto Repeat

When you press a key longer than normal, it repeats until you release it. To disable this feature, click on the Disable button. The **Help** and **Return** keys never autorepeat.

VXT DECterm windows also have an Auto Repeat feature. When you create a VXT DECterm window, its Auto Repeat setting works independently of the Terminal Manager window's setting. To disable Auto Repeat for the Terminal Manager and VXT DECterm windows, disable both settings.

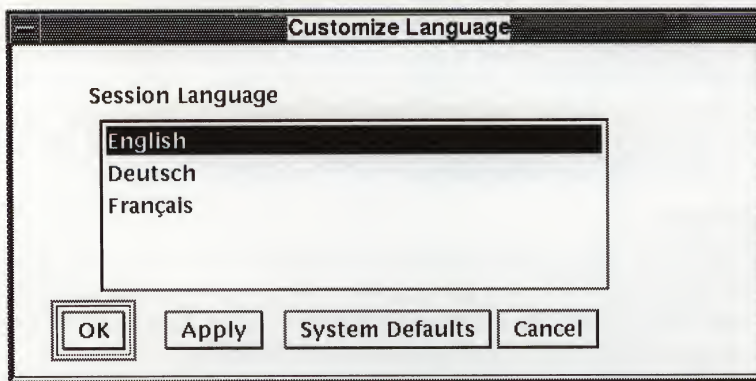
#### ☐ Lock Key State

Normally when you press the lock key, the alphabetic keys send uppercase letters; the number keys and nonalphabetic character keys do not send their shifted character.

When you click on the Shift Lock button, all keys send their shifted character. The new setting takes effect when you restart the terminal.

## 6.4 Choosing the Display Language

The terminal supports different display languages. To change your display language setting, choose Language... from the Terminal Manager window's Customize menu. The Customize Language dialog box looks like this:



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#### To choose a new language:

1. Click on the language in the Session Language scroll box.
2. Click on OK to save the setting and dismiss the Customize Language dialog box.
3. Display the Session menu from the Terminal Manager window's menu bar.

## Customizing the Terminal

### 6.4 Choosing the Display Language

4. Click on Reboot to restart the terminal and display the new language.

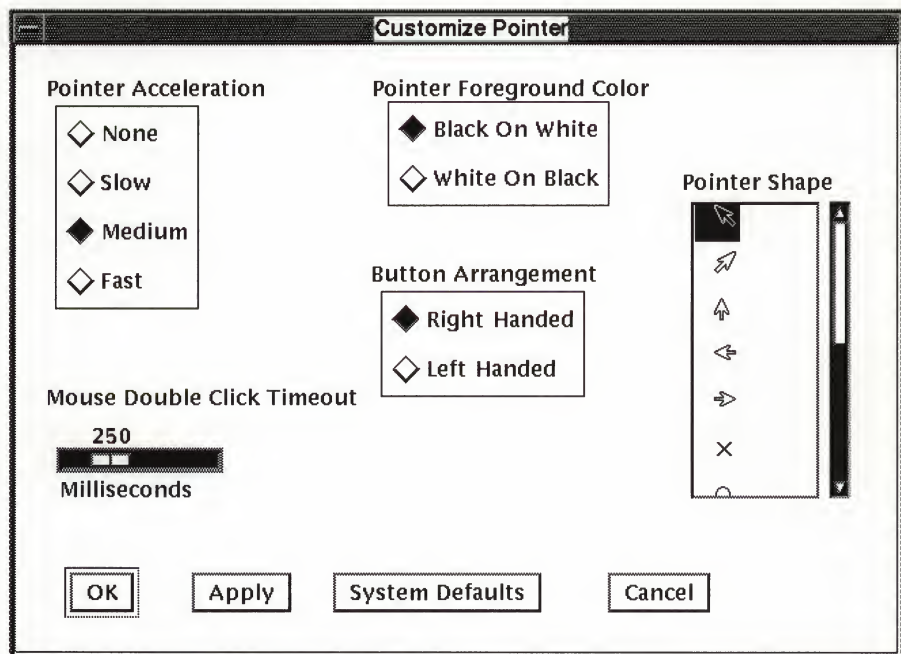
#### Note

If you have customized AutoStart settings, you must reenter the settings after you change your display language (Section 6.11).

## 6.5 Changing Your Pointer and Mouse Settings

You can change the shape, color, and speed of the pointer. You can also set the mouse buttons for a left-handed or right-handed user, as well as set the time limit for performing the second click in a double-click sequence. To change your mouse and pointer settings, choose Pointer... from the Terminal Manager window's Customize menu. The Customize Pointer dialog box looks like this:

**Customize Pointer Dialog Box (Monochrome)**



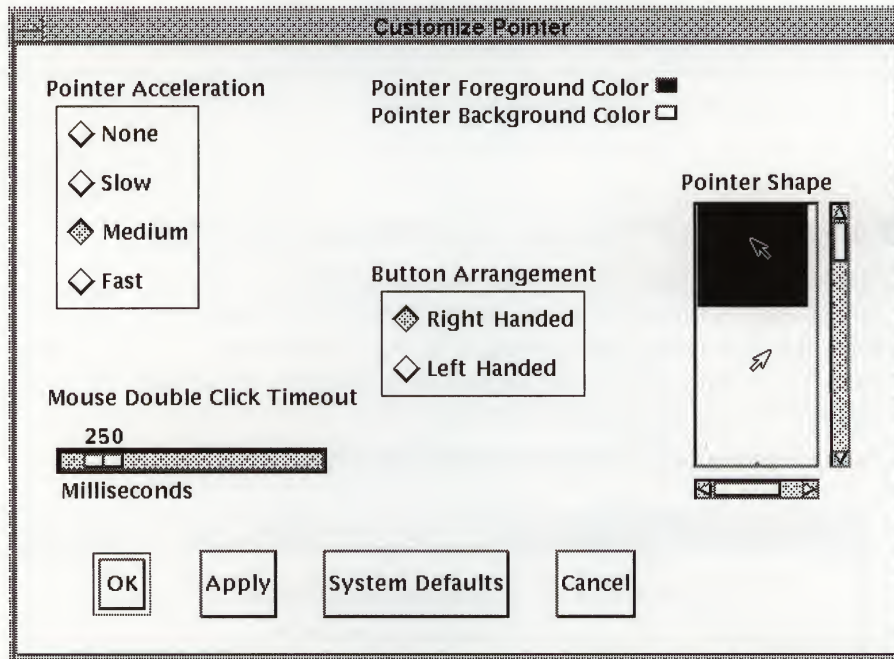
LJ-01160-RAGS



## Customizing the Terminal

### 6.5 Changing Your Pointer and Mouse Settings

#### Customize Pointer Dialog Box (Gray Scale or Color)



LJ-01150-RAGS

From the Customize Pointer dialog box, you can change any of the following settings:

#### ☐ **Pointer Acceleration**

Click on one of the four options to vary the rate at which the pointer moves in relation to the mouse. The None setting keeps the pointer speed constant. The Fast setting makes the pointer move farther as you move the mouse faster. The default setting is Medium.

#### ☐ **Button Arrangement**

The default mouse button arrangement is for a right-handed user—MB1 on the left of the mouse and MB3 on the right. If you are left-handed, you can click on the Left Handed button. This makes MB1 the right mouse button and MB3 the left mouse button. MB2 is always the middle button.

## Customizing the Terminal

### 6.5 Changing Your Pointer and Mouse Settings

#### ☐ **Pointer Foreground Color**

The pointer consists of an outline and filled center.

**On a monochrome terminal:** Normally, the pointer's filled area is black with a white outline. To reverse the fill and outline colors, click on the White On Black button.

**On gray scale and color terminals:** Normally, the pointer's filled area (foreground) is black. To change this setting, click on the Pointer Foreground Color button. The terminal displays a Color Mixing dialog box (Appendix B).

To see your changes, click on Apply or OK in the dialog box.

#### ☐ **Pointer Background Color**

This button is only on gray scale and color terminals. To change the default color, click on the Pointer Background Color button. The terminal displays a Color Mixing dialog box (Appendix B).

To see your changes, click on Apply or OK in the dialog box.

#### ☐ **Pointer Shape**

To change the pointer shape, scroll through the list of shapes and choose the one you want.

#### ☐ **Mouse Double Click Timeout**

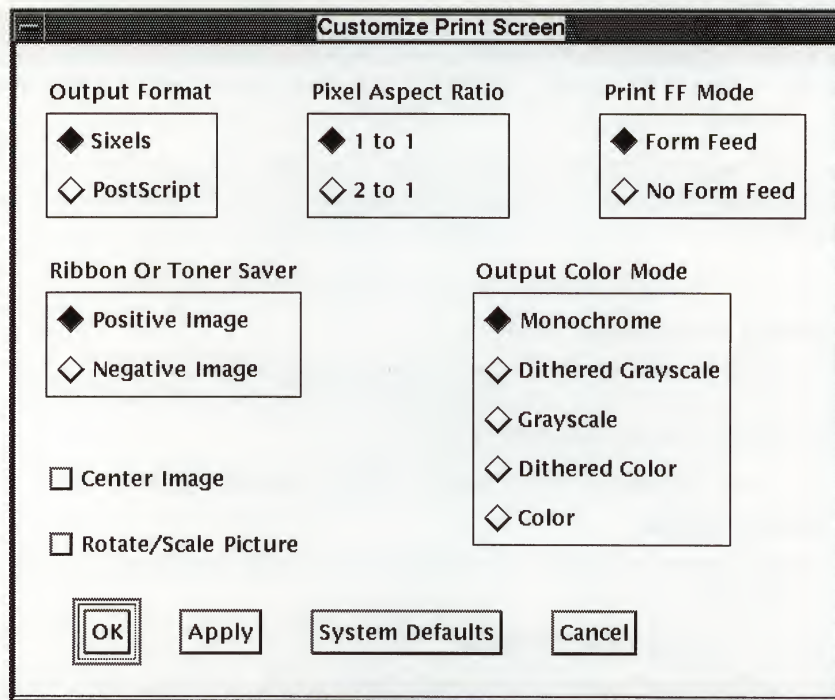
Some applications can tell two single clicks from a double click, based on the speed at which buttons are clicked. To change the time allowed for making the second click in a double-click sequence, drag the slider to the right or left, or move the pointer to a location on the scale and click MB1.

## 6.6 Changing Your Print Screen Settings

Print screen settings affect a printer connected locally to the serial or parallel port on the rear of the terminal. You can control certain printing features for print screen operations, such as the output format and the ability to center or rotate the image. To view the print screen settings, choose Print Screen... from the Terminal Manager window's Customize menu. The Customize Print Screen dialog box looks like this:

## Customizing the Terminal

### 6.6 Changing Your Print Screen Settings



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From the Customize Print Screen dialog box, you can change the following settings:

#### ☐ **Output Format**

You can choose the output format to match your printer's data format, sixel or POSTSCRIPT.

#### ☐ **Pixel Aspect Ratio**

You can choose the pixel aspect ratio to match the dot density of the printer you are using. A pixel aspect ratio of 1 to 1 is appropriate for most printers.

- For level 2 printers such as the LA75 or LN03, use a pixel aspect ratio of 1 to 1.
- For level 1 printers such as the LA50, use a pixel aspect ratio of 2 to 1.

#### ☐ **Print FF Mode**

The terminal can send a form feed (FF) character to the printer port at the end of a print screen operation. If you want to send a form feed, click on the Form Feed button.



☐ **Ribbon or Toner Saver**

Normally, you print dark images on a light background. However, a large image may consume a great deal of printer ribbon or toner. To save ribbon or toner, you can click on the Negative Image button; this reverses the dark and light portions of the printed output.

☐ **Output Color Mode**

Window snapshots are usually printed or captured in black and white. Click on the Color option if you want to print color pictures. Click on the Grayscale option to print black and white images in various gray tones. The Grayscale setting also makes screen colors easier to distinguish in black and white print. You may want to use the Dithered Color or Dithered Grayscale buttons when you are printing continuous tone images such as photographic images.

☐ **Center Image**

Use the Center Image button to automatically center the screen image on the printed page.

☐ **Rotate/Scale Picture**

For wide images, you can use the Rotate/Scale button to automatically rotate and scale images so they fit on the printed page.

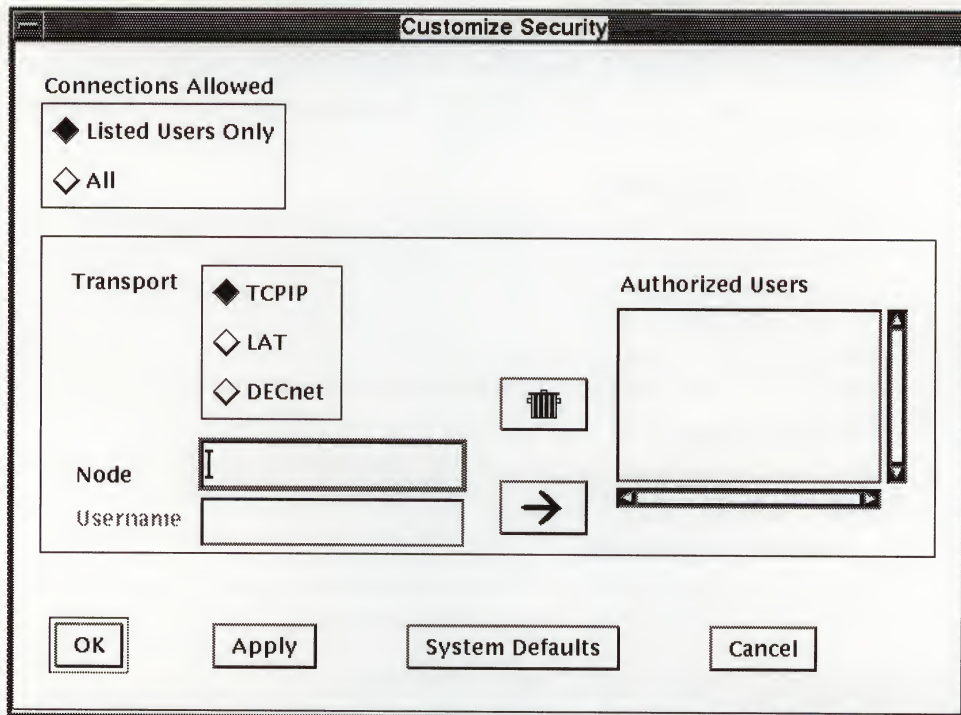
## **6.7 Changing Your Security Settings**

Initially, you cannot connect to your terminal from another system (unless your system manager has customized your security settings). This means you cannot log in from another system and use your terminal until you authorize yourself to do so.

You can choose which hosts and users can connect to your terminal. Only authorized hosts and users can make connections to the terminal to display applications on your screen or request data from your screen. To change your security settings, choose Security... from the Terminal Manager window's Customize menu. The Customize Security dialog box looks like this:

## Customizing the Terminal

### 6.7 Changing Your Security Settings



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#### ☐ **Connections Allowed**

Normally, only those users listed in the Authorized Users scroll box can connect to the terminal. To allow any user on the network to connect to the terminal, click on the All button.

To prevent any X connection to your terminals, click on the Listed Users Only button and leave the Authorized Users scroll box empty.

**Listed Users Only** When you choose this setting, only the systems and users entered in the Authorized Users scroll box can establish X connections to your terminal. This setting requires that you authorize your own account in addition to any others that need access to your display.

**All** When you choose this setting, any system on the Ethernet can establish an X connection to your terminal. Use this setting if you are part of a small group running interactive applications that require sharing of information in real time.

## Customizing the Terminal

### 6.7 Changing Your Security Settings

#### ☐ **Authorized Users**

The Authorized Users scroll box contains the names of those users you allow to have access to your terminal. When you add a user, you associate the user with their communication transport, address, node name, and username, if applicable.

#### **To add users to the Authorized Users List:**

1. In the Transport box, click on the type of transport of the user (TCP/IP, LAT, or DECnet).
2. Enter an address or node name in the Node box, then press the  key.
  - *TCP/IP example:* market or 12.345.123.45
  - *LAT example:* MARKET
  - *DECnet example:* MARKET or 61.513
3. For LAT and DECnet, enter a username in the Username box, then press the  key. You can use the asterisk (\*) wildcard character to specify all users.
  - *Example:* CAROLYN or \*
4. Click on the  button to enter the user in the Authorized Users scroll box.
5. Repeat the previous steps for each user you want to add to the Authorized Users scroll box.
6. Click on Apply or OK to save your security settings.

#### **To remove an authorized user:**

1. In the Authorized Users scroll box, click on the username you want to remove.
2. Click on the trash can button.

---

#### **Caution**

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If you click on System Defaults, you clear the Authorized Users scroll box.

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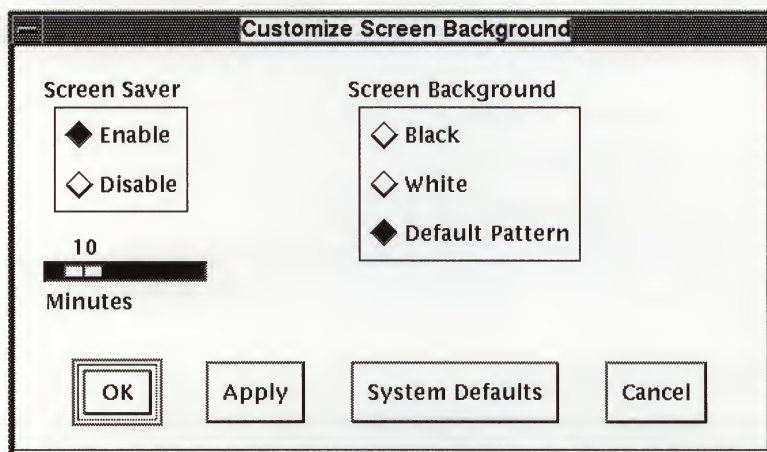
## Customizing the Terminal

### 6.8 Changing Your Screen Background

## 6.8 Changing Your Screen Background

You can change the look of your terminal's screen display. For example, you can change the screen's background color or select the default screen pattern. To change your screen settings, choose Screen Background... from the Terminal Manager window's Customize menu. The Customize Screen Background dialog box is displayed:

### Customize Screen Background Dialog Box (Monochrome)

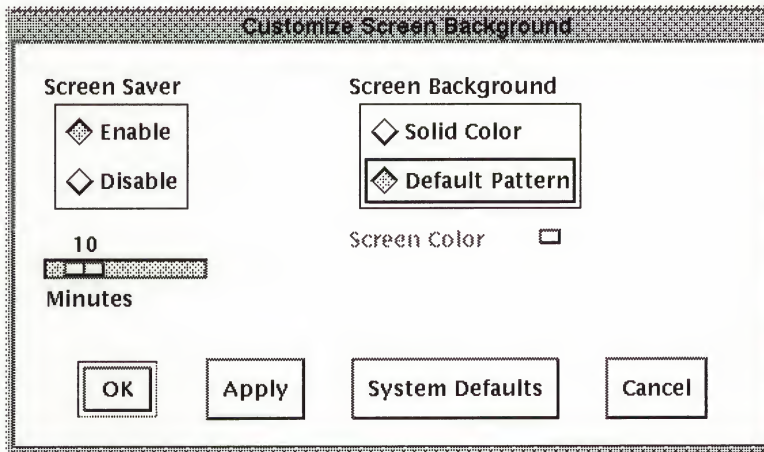


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## Customizing the Terminal

### 6.8 Changing Your Screen Background

#### Customize Screen Background Dialog Box (Gray Scale or Color)



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From the Customize Screen Background dialog box, you can change the following settings:

#### ☐ **Screen Saver**

The Screen Saver extends the life of your monitor by shutting off the display if the terminal is inactive for a specified time. Normally, the terminal shuts off its display after 10 minutes of keyboard or mouse inactivity. You can use the sliding scale to vary the time, from 1 to 60 minutes.

#### ☐ **Screen Background**

The default screen background pattern is a tight, gray crossweave. To change the screen background to a solid color:

**On a monochrome terminal:** Click on the Black or White radio button.

**On gray scale and color terminals:** Click on the Solid Color button. Then click on the Screen Color button. The terminal displays a Color Mixing dialog box (Appendix B).

To see your new setting in effect, click on Apply or OK.

To display the default pattern, click on the Default Pattern button.

## Customizing the Terminal

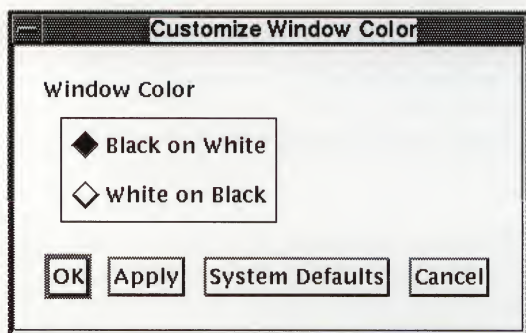
### 6.9 Changing Your Window Colors

## 6.9 Changing Your Window Colors

On monochrome terminals, you can change your window's color to white text (foreground) on a black background. On gray scale and color terminals, you can change your window's foreground, background, and highlight colors. You can also change the shadow colors that produce the three-dimensional look.

To change your window color settings, choose Window Color... from the Terminal Manager window's Customize menu. The terminal displays the Customize Window Color dialog box for a monochrome or color terminal.

### Customize Window Color Dialog Box (Monochrome)



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From the Customize Window Color dialog box, you can change the following settings on monochrome terminals:

### On Monochrome Terminals

#### ☐ Window Color

The window color is normally black on white. Click on the White On Black radio button to reverse the colors.

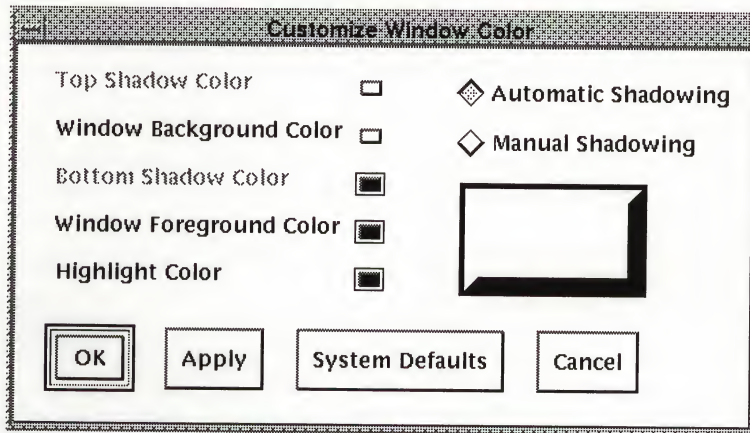
To see your new setting in effect, click on Apply or OK.



## Customizing the Terminal

### 6.9 Changing Your Window Colors

#### Customize Window Color Dialog Box (Color)



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From the Customize Window Color dialog box, you can change the following settings on gray scale or color terminals:

#### On Gray Scale or Color Terminals

##### ☐ **Top Shadow Color**

Top and bottom shadow colors must be well matched to present a three-dimensional look. Normally, the terminal automatically determines top and bottom shadow colors when you change the window color. When you use automatic shadowing, the Top Shadow Color and Bottom Shadow Color labels are dimmed.

To choose your own top shadow color:

1. Click on the Manual Shadowing button to disable automatic shadowing.
2. Click on the Top Shadow Color button to display the Color Mixing dialog box (Appendix B).

##### ☐ **Window Background Color**

The window background color is normally white. To change this setting, click on the Window Background Color button to display the Color Mixing dialog box (Appendix B).

If you save your changes by clicking on Apply or OK in the Color Mixing dialog box, your new settings take effect when you start your next session.

##### ☐ **Bottom Shadow Color**

The Bottom Shadow button works like the Top Shadow button.

## Customizing the Terminal

### 6.9 Changing Your Window Colors

#### ☐ Window Foreground Color

The Window Foreground Color setting changes the color of text and graphics in the window.

To change the window foreground color, click on the Window Foreground Color button to display the Color Mixing dialog box (Appendix B).

If you save your changes by clicking on Apply or OK in the Color Mixing dialog box, your new settings take effect when you start your next session.

#### ☐ Highlight Color

The Highlight Color setting controls the color of screen objects with input focus such as text-entry boxes and check and radio buttons. The highlight color is normally black. To change the highlight color, click on the Highlight Color button to display the Color Mixing dialog box (Appendix B).

If you save your changes by clicking on Apply or OK in the color mixer, your new settings take effect when you start your next session.

## 6.10 Changing Your Terminal Manager Settings

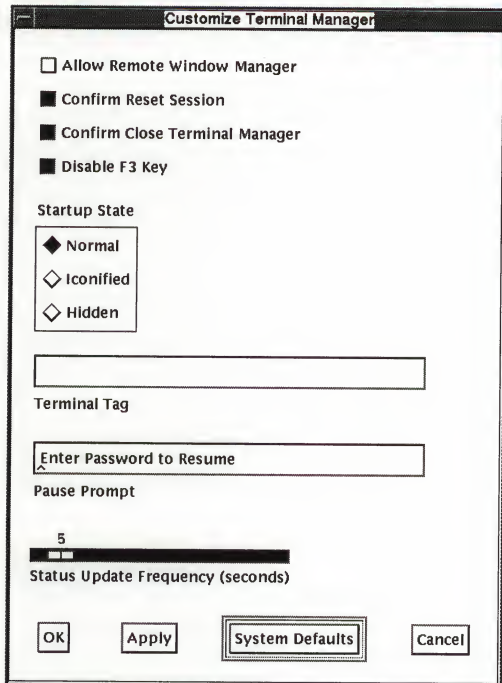
The Customize Terminal Manager dialog box lets you choose various settings that affect the terminal manager and window management. You can

- Choose host or terminal window management
- Choose the Terminal Manager window's startup state (normal, icon, or hidden)
- Use the F3 toggle key to hide or display the Terminal Manager window
- Disable the confirmation box for resetting the terminal
- Enter a tag to identify your terminal in the configuration manager
- Enter the text to display when you pause a session
- Specify how frequently to update the status boxes in the Session menu

To change your Terminal Manager window settings, choose Terminal Manager... from the Terminal Manager window's Customize menu. The Customize Terminal Manager dialog box looks like this:

## Customizing the Terminal

### 6.10 Changing Your Terminal Manager Settings



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From the Customize Terminal Manager dialog box, you can change the following settings:

#### ☐ **Allow Remote Window Manager**

You can choose whether or not a host-based window manager can take over windowing operations on the screen. The terminal's local window manager provides you with quicker response time and overall higher performance. However, a host-based window manager may offer more features. To let the host control windowing operations, click on the Allow Remote Window Manager button.

#### ☐ **Confirm Reset Session**

When you choose Reset, Reboot, or Shutdown from the Session menu, the terminal normally asks for confirmation. You can turn this feature on or off by clicking on the Confirm Reset Session button. When this feature is off, choosing Reset, Reboot, or Shutdown from the Session menu will immediately end the current session, without displaying the confirmation box. See Section 3.3.3 for details on the Session menu.



## Customizing the Terminal

### 6.10 Changing Your Terminal Manager Settings

#### ☐ Confirm Close Terminal Manager

When you choose Close from the Session menu, the terminal normally asks you to confirm that you want to close the Terminal Manager window. You can turn this confirmation feature on or off by clicking on the Confirm Close Terminal Manager button. When this feature is off, choosing Close from the Session menu immediately closes the Terminal Manager window, without displaying the confirmation box. Closing the Terminal Manager window also closes the VXT Message Box, unless you have customized the terminal to start the VXT Message Box as a separate application.

#### ☐ Disable F3 Key (For Hiding the Terminal Manager Window)

You can enable the **F3** key to act as a toggle key for hiding and displaying the Terminal Manager window, VXT Message Box, and their icons. This feature allows you to hide these applications while you are working in other windows, then redisplay them when needed. Normally, the **F3** key function is disabled.

When you redisplay the Terminal Manager window and VXT Message Box, the message box gets input focus.

If you have customized the AutoStart dialog box to start the Terminal Manager window and VXT Message Box as separate applications, then the **F3** key cannot hide the message box. In this case, the Terminal Manager window receives input focus when you redisplay it.

When you use the **F3** key to hide and redisplay the Terminal Manager and VXT Message Box, you lose any customized window size settings for those applications. If you maximize the windows before hiding them, you cannot use the maximize button to return them to their normal size.

#### ☐ Startup State

Normally when you restart the terminal, it displays the Terminal Manager window and VXT Message Box. You can choose to hide the Terminal Manager window and VXT Message Box at startup, or to display them as icons. To change the current setting, click on the appropriate button.

If you have changed the Customize AutoStart dialog box settings to start the Terminal Manager window and VXT Message Box as separate applications, the Startup State only affects the Terminal Manager window.

---

#### Caution

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Before you change the Startup State to Hidden, decide whether or not you need to make the Terminal Manager window viewable after startup. If you want the window to be viewable, make sure the **F3** key is enabled to display the Terminal Manager window. See the Disable F3 Key button in this dialog box. If you forget to enable the **F3** key,

## Customizing the Terminal

### 6.10 Changing Your Terminal Manager Settings

see your system manager to change the setting from the Configuration Manager: Resource Management dialog box.

---

#### ☐ **Terminal Tag**

You can specify a name to identify your terminal in the configuration manager (server-based systems only). To enter a name, click on the Terminal Tag box. Your name can have up to 31 characters. After you click on Apply or OK in the Customize Terminal Manager dialog box, your system manager can display the new terminal tag in the Configuration Manager: Resource Management dialog box.

Your system manager can also create a name for your terminal by using the Optional Name field in the configuration manager's Create Terminal dialog box. The terminal uses the most recently entered name (Terminal Tag or Optional Name).

#### ☐ **Pause Prompt**

You can specify the text displayed in the pause prompt box when you pause your terminal session. Click on the Pause Prompt box and enter a prompt of up to 80 characters.

#### ☐ **Status Update Frequency (seconds)**

You can specify how frequently the terminal updates the information in the status dialog boxes displayed from the Session menu. The normal setting is 5 seconds. Click on the Status Update Frequency (seconds) slider to specify an interval from 0 to 60 seconds.

## 6.11 Specifying Your AutoStart Settings

The AutoStart dialog box lets you enter a list of host sessions and VXT applications to automatically start each time you

- Turn on the terminal
- Choose the AutoStart menu item from the Session menu
- Choose the Reset, Reboot, or Shutdown menu item from the Session menu

By default, the terminal autostarts the Terminal Manager window, VXT Message Box, and local Motif window manager.

The format of the AutoStart dialog box is the same as the Create dialog box. To display the AutoStart dialog box, choose AutoStart... from the Terminal Manager window's Customize menu. The Customize AutoStart dialog box looks like this:



## Customizing the Terminal

### 6.11 Specifying Your AutoStart Settings

Customize AutoStart

AutoStart List

Application	Transport	Host	Comment
Term Mgr + Msg Box			Term Mgr + Msg Box
Motif WM			Motif WM

Application: ☒ X Session, ☐ DECTerm, ☐ 3270 (License Req'd), ☐ Motif WM, ☐ Terminal Manager, ☐ Message Box, ☐ Term Mgr + Msg Box

Transport: ☒ TCP/IP, ☐ LAT, ☐ DECnet, ☐ Serial

Host Name or IP Address:  ☐ Any Host ☐ Any Host Indirect

Comment:

Clear List Known Hosts...

OK System Defaults Close

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#### ☐ AutoStart List

The terminal starts applications in the order you list them in the AutoStart List. The default entries in the Customize AutoStart dialog box are

- Terminal Manager window and VXT Message Box
- Motif Window Manager

By default, the terminal starts the Terminal Manager window and VXT Message Box as a single application. You can choose to start them as separate applications.

#### To add a session or application to the AutoStart list:

See the following steps. The AutoStart dialog box controls operate the same as the Create dialog box controls. See Section 3.2 for syntax rules and details on buttons.






## Customizing the Terminal

### 6.11 Specifying Your AutoStart Settings

1. In the Application box, click on the type of session (X Session, DECterm, 3270) or VXT application you want to autostart. For VXT applications, skip steps 2 and 3.
2. In the Transport box, click on the communication method to use for the session. If you choose Serial, skip step 3.
3. In the Host Name or Address box, enter the name or address of the host system. If you make a typing mistake, you can use the Clear button to clear the box.

#### **For IP sessions:**

- Use the Any Host button if you want to use the first available IP host.
  - Use the Any Host Indirect button to specify a host that will act as a pathway to find the first available IP host.
  - Use the Comment box to enter optional text comments. For example, if you entered a host name, you may want to enter the IP address as a comment.
  - Use the List Known Hosts... button to display a dialog box that lets you list available IP hosts.
4. Click on  to add your entry to the AutoStart List.  
To delete entries, select the entry in the list and click on the trash can button.  
To move entries, select the entry in the list and click on the  or  button.
  5. Click on the OK button to save your settings.

The AutoStart dialog box saves your settings when you click on the OK button. The Create dialog box contains a Save button for saving settings.

#### **Reenter AutoStart Settings After Changing the Display Language**

If you change your display language, you must reenter your AutoStart settings.

#### **User Tip: Remove Unused Applications to Start the Terminal Faster**

Normally, the terminal autostarts the local Motif window manager and the combined Terminal Manager window + VXT Message Box applications. If you no longer need to use an application, you should remove it from your AutoStart list. The fewer applications listed in the AutoStart List, the faster the terminal can start up and connect to your host sessions.

If you use the remote window manager on a host system, you may want to remove the local Motif window manager application from the AutoStart list. You can enable the use of remote window managers in the Customize Terminal manager dialog box. (Section 6.10).

## Customizing the Terminal

### 6.11 Specifying Your AutoStart Settings

If you remove the combined Terminal Manager window + VXT Message Box applications, you can restart them from the VXT Create pop-up menu. To display the pop-up menu, click MB2 anywhere on the screen workspace.

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#### Caution

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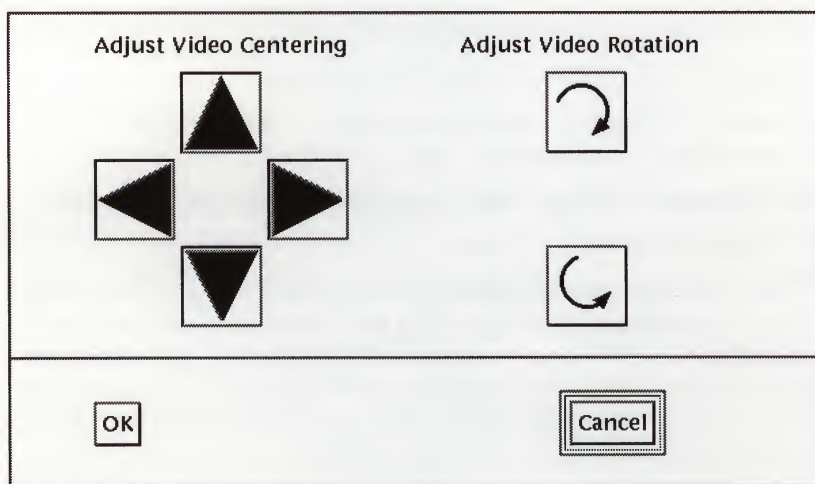
If you remove the combined Terminal Manager window + VXT Message Box applications from the Preferred Services list in the Create dialog box, they will not appear on the VXT Create pop-up menu the next time you reset the terminal.

---

### 6.12 Changing Your Video Alignment Settings (VX227 Models)

If you have a VXT 2000 model VX227 windowing terminal, you adjust your video alignment from a Customize dialog box rather than using physical controls on the terminal. The video alignment dialog box is only for VX227 terminals.

To adjust your video alignment settings, choose Video Alignment... from the Terminal Manager window's Customize menu. The Customize Video Alignment dialog box looks like this:




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## 6.12 Changing Your Video Alignment Settings (VX227 Models)

From the video alignment dialog box, you can change the following settings. Your new settings take effect when you click on OK.

### ☐ Adjust Video Centering

You use the four Adjust Video Centering buttons to center the display on the screen. Each time you click on an  button, the display shifts in the arrow's direction.

### ☐ Adjust Video Rotation

You use the two Adjust Video Rotation buttons to rotate the display on the screen. Each time you click on one of the buttons, the display rotates in the arrow's direction.

## 6.13 Saving the Terminal Manager Window's Position and Size

You can make changes to the Terminal Manager window's position and size on the screen, then save the changes for use in all future sessions. You can also recall the factory-default position and size for the Terminal Manager window, or recall the last position and size you saved.

To save or restore the Terminal Manager window's position and size on the screen, use the following menu items from the Customize menu:

Choose...	To...
Save Terminal Manager Window	Save the Terminal Manager window's current position and size for use in all future sessions.
Restore Terminal Manager Window	Restore the last position and size you saved. Choose this menu item if you want to reset features you changed temporarily, but did not save.
Default Terminal Manager Window	Recall the factory-default position and size for the Terminal Manager window.

## 6.14 Customizing the VXT Message Box

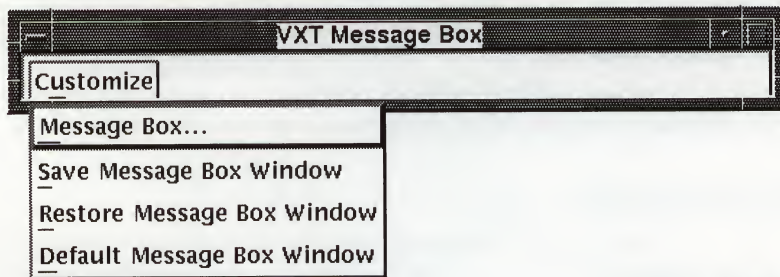
The VXT Message Box displays system status and error messages. You can choose the categories of messages displayed. You can also set the number of message lines saved in the scroll box. To change your VXT Message Box settings:

1. Click on the Customize menu in the VXT Message Box.



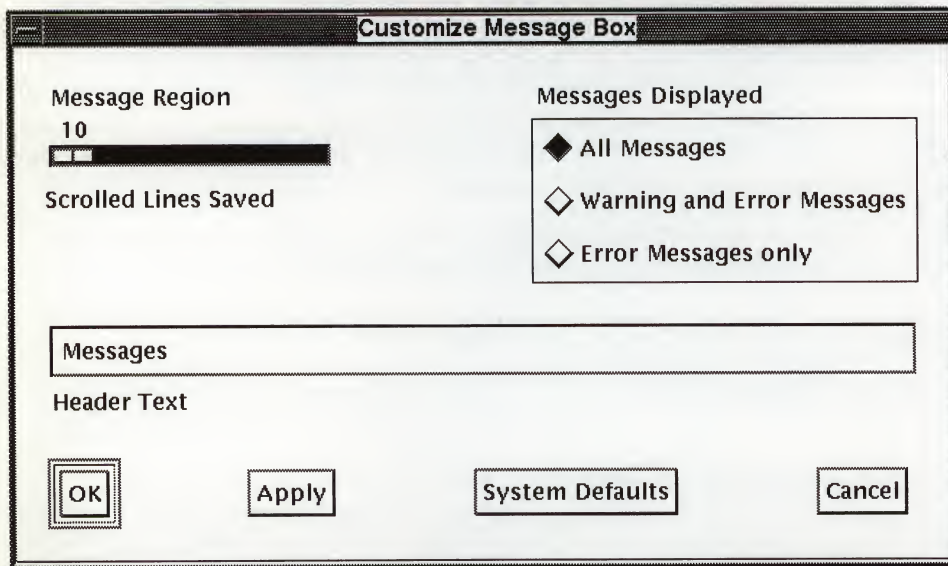
## Customizing the Terminal

### 6.14 Customizing the VXT Message Box



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2. Choose Message Box... to display the Customize Message dialog box.



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From the Customize Message dialog box, you can change the following settings:

#### ☐ Message Region

You can scroll through text in the VXT Message Box. The Scroll Lines Saved slider lets you specify how many message lines to save when they are scrolled out of the region. Any extra lines are discarded.

This feature does not affect the size of the Messages region<sup>2</sup>. You can change the size of the scroll box by changing the size of the VXT Message Box window.

☐ **Messages Displayed**

Normally, the terminal displays all informational, warning, and error messages in the Messages scroll box. You can choose to display warning and error messages only, or error messages only.

☐ **Header Text**

Normally, the title of the Messages scroll box in the VXT Message Box is Messages. To change the title, click on the Header Text box and enter a new title.

### **6.14.1 Saving the VXT Message Box's Position and Size**

You can make changes to the VXT Message Box's position and size on the screen, then save the changes for use in all future sessions. You can also recall the factory-default position and size, or recall the last position and size you saved.

To save or restore the VXT Message Box's position and size on the screen, use the following menu items from the Customize menu:

<b>Choose...</b>	<b>To...</b>
Message Box...	Display the Customize Message Box.
Save Message Box Window	Save the VXT Message Box's current position and size for use in all future sessions.
Restore Message Box Window	Restore the last position and size you saved. Choose this menu item if you want to reset features you changed temporarily, but did not save.
Default Message Box Window	Recall the factory-default position and size for the VXT Message Box.

#### **Closing the VXT Message box:**

To close the VXT Message box, click on the File menu and choose Exit. If the File menu does not appear in the Message box, choose the Close button on the Terminal Manager window's Session menu. The File menu only appears when the Message box and Terminal Manager are started as separate applications. See Section 6.11.

# 7



## Customizing the System

This chapter describes how you can customize many of your terminal's system settings, using the bottom half of the Customize menu in the Terminal Manager window. These settings affect system communication, font paths, the terminal's X server, and the version of VXT software used.

Initially, the features use factory-default settings that work with many host systems. You can make changes to suit your personal preference and computing environment. After you make changes, you can save your settings for all future sessions.

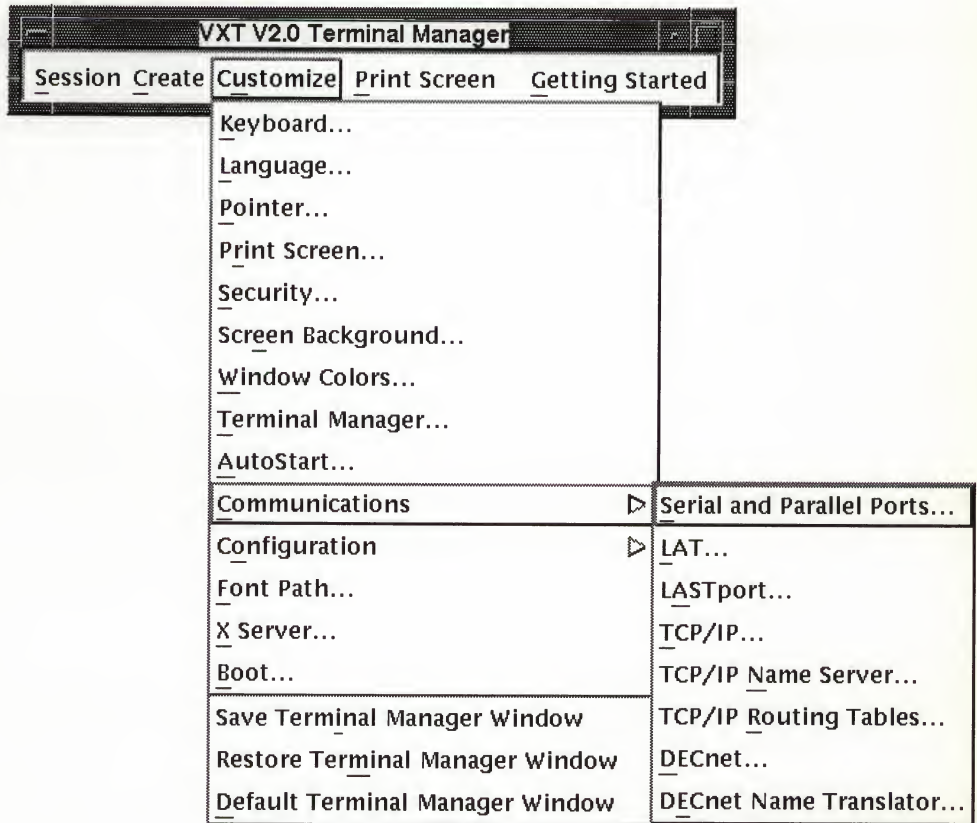
The chapter covers the following major topics:

- Changing System and Printer Communication Settings
- Changing Your Font Path Settings
- Changing Your X Server Settings
- Changing Your Boot Settings for VXT Software



## 7.1 Displaying the Customize Menu

To display the Customize menu, click on Customize in the Terminal Manager window's menu bar. The Customize menu looks like this:



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### Note

A VXT manager can customize settings for terminals and work groups. The VXT manager can also lock or unlock access to one or more of the Customize menu items. Locked menu items are dimmed.

## Customizing Your System

### 7.1 Displaying the Customize Menu

When you choose a menu item from the Customize menu, the terminal displays a dialog box with the feature settings for that topic. The Communications menu item displays a submenu that leads to a set of dialog boxes. In dialog boxes, shaded buttons indicate the current settings. You can examine the settings and change them if desired.

### 7.2 Changing System and Printer Communication Settings

You can customize certain system communication settings to match host systems and your terminal's local printer. This section covers the following topics:

- **Changing Your Serial and Parallel Port Settings**  
These settings affect your local printer or serial host.
- **Changing Your LAT Settings**  
These settings let a system manager fine-tune communication in a LAT network.
- **Changing Your LASTport Group Code Settings (InfoServer Systems)**  
The group code determines which InfoServer systems your terminal can communicate with.
- **Changing Your TCP/IP IP Address Settings**  
You must enter an IP address to communicate with systems that use the TCP/IP transport.
- **Changing Your TCP/IP Name Server Settings**  
You must specify a name server if you want to identify TCP/IP systems by name in other dialog boxes.
- **Changing Your TCP/IP Routing Table Settings**  
You can specify routing information for communicating with TCP/IP systems.
- **Changing Your DECnet Address Settings**  
You must enter a DECnet address to communicate with systems that use the DECnet transport.
- **Changing Your DECnet Name Translator Settings**  
You must specify a name translator if you want to identify DECnet systems by name in other dialog boxes.

To customize communications, you use the Communications submenu on the Terminal Manager window's Customize menu.

## **Customizing Your System**

### **7.2 Changing System and Printer Communication Settings**

#### **7.2.1 Changing Your Serial and Parallel Port Settings**

You can specify the communication settings of the terminal's serial and parallel ports to make them compatible with a serial host system or a local printer. The default settings work with most Digital systems. Make sure the settings you use match your host system.

The serial port is for connecting a host system or a local serial printer. The parallel port is for connecting a local parallel printer. Each port has one 25-pin connector on the rear of the system box.

When you connect to a host system through the serial port, you use the 25-pin, RS-232 serial port connector on the rear of the terminal. The serial port connector is above the parallel port connector.

To change the port settings, choose the Communications submenu from the Terminal Manager window's Customize menu. Then choose Serial and Parallel Ports... to display the Customize Serial and Parallel Ports dialog box:



## Customizing Your System

### 7.2 Changing System and Printer Communication Settings

**Customize Serial and Parallel Ports**

**Port Usage**

☒ Parallel Port: Printer, Serial Port: Host  
☐ Serial Port: Printer

Transmit  Receive

Character Format

☐ Parity Check ☐ Host Accessible Printer Port

**Stop Bits** ☒ One ☐ Two

**XOFF At** ☒ 64 ☐ 128 ☐ No XOFF

**Modem Control** ☒ Data Leads Only ☐ Modem Control

LJ-01168B-RAGS

From the Customize Serial and Parallel Ports dialog box, you can change the following settings:

#### ☐ **Port Usage**

By default, the parallel port acts as a printer port and the serial port acts as a host port. You can set the serial port to act as the printer port. You can choose one of two functions for the serial port:

## Customizing Your System

### 7.2 Changing System and Printer Communication Settings

Choose...	To...
Parallel Port: Printer, Serial Port: Host	Use the parallel port for a parallel printer, and the serial port for a host system.
Serial Port: Printer	Use the serial port for a serial printer.

#### ☐ **Transmit**

You can change the speed the terminal uses to send data, to match your host system or printer. Normally, the serial port uses a speed of 9600 baud, which works with most Digital systems. To choose another speed, click on the button in the Transmit box and make a choice from the pop-up menu. Your new speed appears in the Transmit box.

The terminal does not support speeds lower than 300 baud.

#### ☐ **Receive**

You can change the speed the terminal uses to receive data from the host system or printer. Make sure you choose a receive speed that matches your host's or printer's transmit speed. Normally, the terminal's receive speed matches its transmit speed (rx = tx setting). However, the terminal can transmit at one speed and receive at another.

To choose another speed, click on the button in the Receive box and make a choice from the pop-up menu. Your new speed appears in the Receive box.

#### ☐ **Character Format**

You can choose the word size and number of parity bits used to communicate with the host system or printer. The terminal uses a default word size of 8 bits and no parity. This setting works with most of today's computer systems.

To choose another setting, click on the button in the Character Format box and make a choice from the pop-up menu. Your new setting appears in the Character Format box.

#### ☐ **Parity Check**

Normally, the terminal performs a parity check on bytes of data. To turn this feature on or off, click on the Parity Check button.

#### ☐ **Host Accessible Printer Port**

Normally, the terminal can accept remote printing jobs sent from host systems that use the TCP/IP or LAT transport. To turn off this feature, click on the Host Accessible Printer Port button. To send printing jobs from a host, see Section 3.7.2.

## Customizing Your System

### 7.2 Changing System and Printer Communication Settings

#### ☐ Stop Bits

You can choose the number of stop bits used in the character format. Digital recommends using one stop bit for most applications. To select two stop bits, click on the Two button.

#### ☐ XOFF At

You can choose how many characters the terminal stores in its receive buffer before sending the host or printer an XOFF signal to stop sending data. Normally, the terminal sends XOFF to the host when the input buffer contains 64 characters. To choose 128 characters or no XOFF, click on the appropriate button.

#### ☐ Modem Control

You can choose Modem Control if you are communicating with a host system and need to use extended modem features. Otherwise, use Data Leads Only.

**Data Leads Only** Choose Data Leads only if you do not plan to use modem control features or your modem (or modem cable) is not configured for modem control. The terminal uses pin 2 to transmit data and pin 3 to receive data.

The terminal asserts the data terminal ready (DTR) signal on pin 20 whenever the terminal is on.

The terminal receives the data set ready (DSR) signal on pin 6. The terminal uses DSR to detect the status of the connected device and display status messages about the device. If the device is a printer, the messages describe the printer. If the device is a host system, the messages describe the modem. Note that in Data Leads Only mode data is always transmitted, regardless of the state of the DSR signal.

**Modem Control** Choose Modem Control if you plan to use modem features that require additional signals beyond data leads only, such as call origination and dialing from the keyboard. The control lines follow the CCITT V.24 and V.28 and EIA RS-232-C designations and control the flow of data based on the state of various signals.

### 7.2.2 Changing Your LAT Settings

OpenVMS systems typically use the local area transport (LAT) to connect to the terminal. The terminal connects to all LAT group codes (0 to 255); you cannot select group codes.

Your system manager can fine-tune the characteristics of your LAT environment by adjusting the three slide bars in the Customize LAT dialog box.



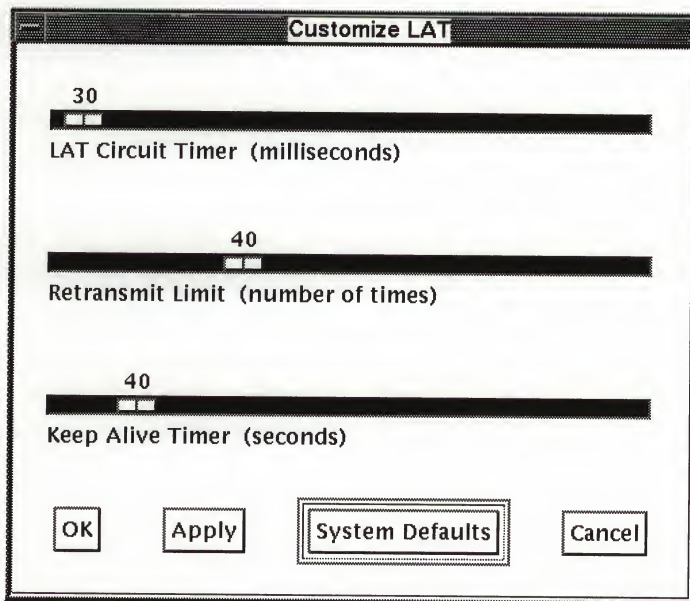
## Customizing Your System

### 7.2 Changing System and Printer Communication Settings

#### Note

These settings directly affect the performance of your local area network. Do not try to adjust these settings yourself; they should be adjusted only by system managers. Incorrect adjustments can produce poor network and terminal performance.

To change LAT settings and adjust performance, choose the Communications submenu from the Terminal Manager window's Customize menu. Then choose LAT... to display the Customize LAT dialog box:



LJ-01169A-RAGS

From the Customize LAT dialog box, you can change the following settings:

#### ☐ LAT Circuit Timer

You set the LAT Circuit Timer to tune the network for the best response time and network performance when running an X window or DECterm terminal window session. The optimum setting depends on the number of users on the local area network and the typical network traffic conditions. The normal setting of 30 milliseconds produces the best performance for most systems.

## Customizing Your System

### 7.2 Changing System and Printer Communication Settings

LAT circuit timer settings takes effect when the first LAT circuit is created. If you change the setting while LAT circuits are running, it does not take effect until you exit all existing LAT circuits.

#### ☐ Retransmit Limit

To make a LAT connection to a host system, the terminal sends out a request-to-connect message, then waits for an acknowledgement. If the host does not acknowledge the request, the terminal resends the message a specified number of times.

The Retransmit Limit setting tells the terminal how many times to resend the message. If the terminal does not receive an acknowledgement after sending the message the specified number of times, the terminal stops requesting a connection and indicates it could not connect to that host.

Normally, the terminal resends the message 40 times before it stops trying to connect to the host. This setting works well with most Digital systems.

#### ☐ Keep Alive Timer

When the terminal is inactive, it sends certain LAT messages out on the network every few seconds to keep the LAT connection alive. Normally, the terminal sends messages out every 40 seconds. This setting works well with most Digital systems.

### 7.2.3 Changing Your LASTport Group Code Settings (InfoServer Systems)

If your terminal is on a large local area network with many servers, group codes can help reduce the number of InfoServers your terminal must identify and communicate with. Server-based terminals use an InfoServer system for downloading and booting VXT software, configuration management, access to the InfoReader library, virtual memory, and other services. To communicate with a particular InfoServer system, your terminal must have the same group code as the InfoServer.

By default, the LASTport group code on InfoServer systems and VXT 2000 windowing terminals is set to 0. If the InfoServer system's group code is not 0, you or your VXT manager must change the terminal's default group code to match the InfoServer's group code.

The LASTport Group Code dialog box lets you change the terminal's group code setting to match the servers that you want to access. Ask your system manager for your server's group code. New group code settings take effect when you restart the terminal.

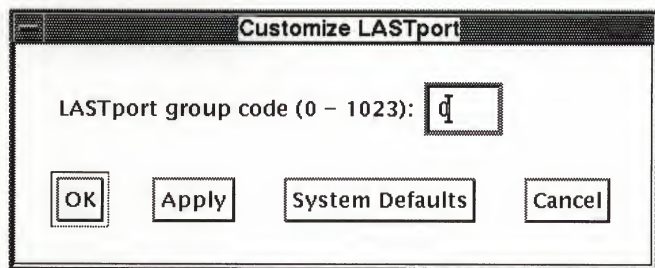
## Customizing Your System

### 7.2 Changing System and Printer Communication Settings

If you cannot boot your terminal from an InfoServer system because your terminal has a different group code:

1. Press the halt button on the rear of the terminal.  
For VXT 2000 terminals with a system box: The halt button is next to the indicator lights on the rear of the system box.  
For VXT 2000 model VX225/VX227 terminals: The halt button is below the keyboard connector on the rear of the monitor.
2. At the >>> prompt, enter the command **b/100000**.
3. At the LASTport group code (0-1023)> prompt, enter the group code of the server you want to connect to. See your VXT manager for the correct group code.
4. After the Terminal Manager window appears, enter the group code in the Customize LASTport dialog box.

To enter or change LASTport group code address settings, choose the Communications submenu from the Terminal Manager window's Customize menu. Then choose LASTport... to display the Customize LASTport dialog box:



LJ-01117-RAGS

#### To enter a LASTport group code:

1. Enter the LASTport group code (from 0 to 1023) in the text-entry box.  
*Examples:* 34 or 567.
2. Press **Return** or click on OK or Apply.
3. Restart the terminal.



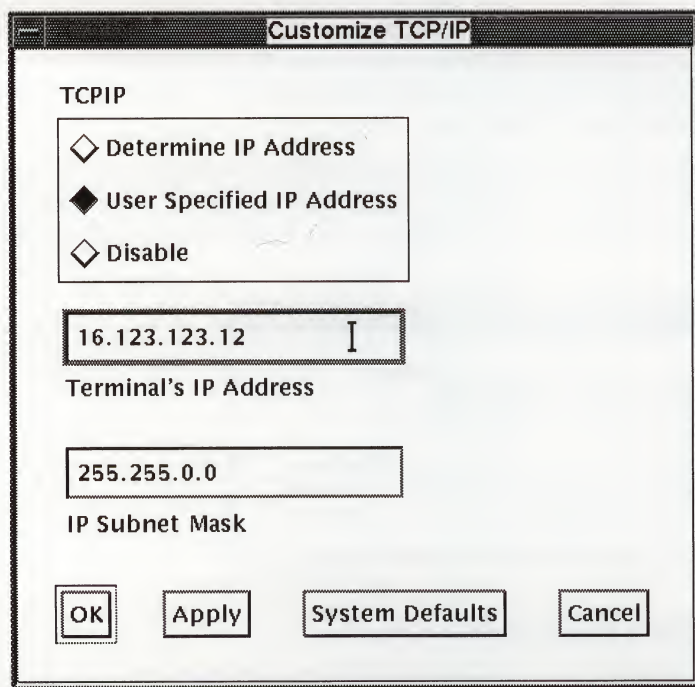
## Customizing Your System

### 7.2 Changing System and Printer Communication Settings

#### 7.2.4 Changing Your TCP/IP IP Address Settings

UNIX, ULTRIX, and DEC OSF/1 AXP systems typically use the TCP/IP transport to connect to the terminal. To communicate with systems using TCP/IP, you must enter an IP address and subnet mask for the terminal. You use the Customize TCP/IP dialog box to enable or disable TCP/IP and enter the terminal's IP address and subnet mask. After you enter and save the IP address, it appears at the bottom of the Terminal Manager window.

To enter or change TCP/IP address settings, choose the Communications submenu from the Terminal Manager window's Customize menu. Then choose TCP/IP... to display the Customize TCP/IP dialog box:



LJ-01170C-RAGS

From the Customize TCP/IP dialog box, you can change the following settings:

#### ☐ **TCPIP**

You can choose to enter an IP address yourself or to have the terminal automatically determine its address from a file set up by your system manager. Normally, the User Specified IP Address button is on. You can disable the use of TCP/IP by clicking on the Disable button.

## Customizing Your System

### 7.2 Changing System and Printer Communication Settings

**Determine IP Address** Use this setting if you want the terminal to automatically determine its IP address, subnet mask, and the IP address of an optional name server by reading a host system file created by your system manager.

After you reboot the terminal, the terminal's IP address appears in the Terminal Manager window.

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#### Note

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Your system manager must enter your terminal's information in the BOOTP daemon's configuration file.

---

**User Specified IP Address** Use this setting if you want to enter your terminal's IP address in this dialog box. After you enter the address and reboot the terminal, the terminal's IP address appears in the Terminal Manager window.

**Disable** Use this setting to disable TCP/IP.

☐ **Terminal's IP Address**

After you click on the User Specified Address button, you can enter an IP address for your terminal. See your system manager for an address to use. After you enter the IP address and subnet mask, click on OK to save the address and dismiss the dialog box. Then reboot the terminal.

☐ **IP Subnet Mask**

After you click on the User Specified Address button, you can enter the IP subnet mask for your terminal. An IP subnet mask acts as a filter for your TCP/IP network. Using the subnet mask makes the terminal ignore certain traffic on the network.

See your system manager for a subnet mask to use. After you enter the IP subnet mask, click on the OK button to save the setting and dismiss the dialog box. Then reboot the terminal.

#### 7.2.5 Changing Your TCP/IP Name Server Settings

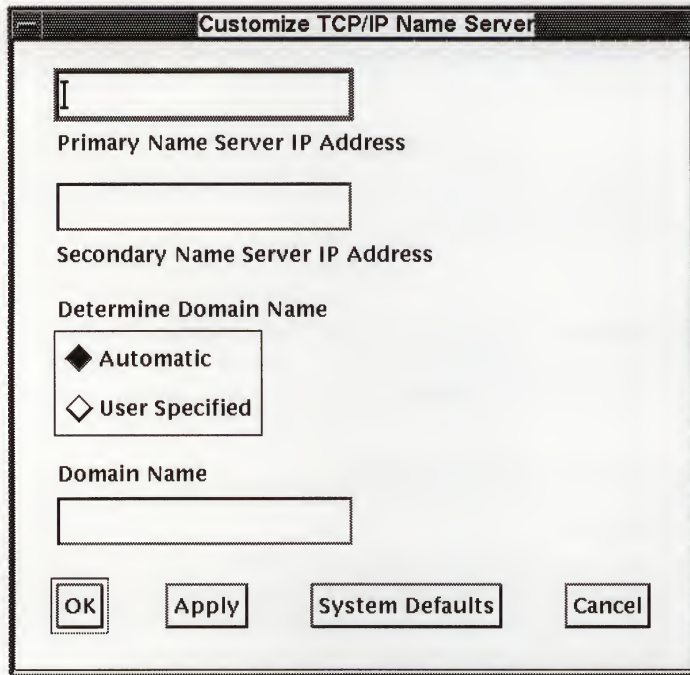
If your network has a name server available, you can specify host names instead of addresses in the Create and Customize AutoStart dialog boxes. A name server stores host names and addresses, so it can determine a host's address from the name you enter.

You can specify a primary and secondary name server. See your system manager for your name server's IP address.

## Customizing Your System

### 7.2 Changing System and Printer Communication Settings

To enter your name server, choose the Communications submenu from the Terminal Manager window's Customize menu. Then choose TCP/IP Name Server... to display the Customize TCP/IP Name Server dialog box:



LJ-01171B-RAGS

From the Customize TCP/IP Name Server dialog box, you can change the following settings:

#### ☐ **Primary Name Server IP Address**

The terminal first attempts to use the primary name server to resolve names entered into fields requiring a host name or IP address.

To enter or change the primary name server, click on the Primary Name Server IP Address box and enter the primary name server's IP address.

#### ☐ **Secondary Name Server IP Address**

If the terminal cannot resolve a host name or IP address with the primary name server, the terminal queries the secondary name server.

To enter or change the secondary name server, click on the Secondary Name Server IP Address box and enter the secondary name server's IP address.



## Customizing Your System

### 7.2 Changing System and Printer Communication Settings

#### ☐ Determine Domain Name

The terminal displays its domain name in the Domain Name box if the name is available on the network. The terminal attempts to resolve a domain name only if a primary name server is specified. Host name resolution is not possible without a valid domain name.

#### **To enter a domain name:**

1. Click on the User Specified button in the Determine Domain Name box.
2. Enter a domain name in the Domain Name box.
3. Click on Apply or OK.

If you choose the System Defaults button or clear the name server fields and choose OK or Apply, the terminal's Name Server capability is turned off and the terminal no longer has a domain name. The Domain Name field is not cleared, even though there is no domain name.

When you reboot the terminal, the domain name is determined and maintained in the name server. If you change your primary name server, the domain of the terminal will not change unless you change the domain name for the subnet and reboot the terminal.

If the domain name is not available when you boot the terminal because the primary name server is on a different subnet from the terminal, it will be resolved the next time it is needed.

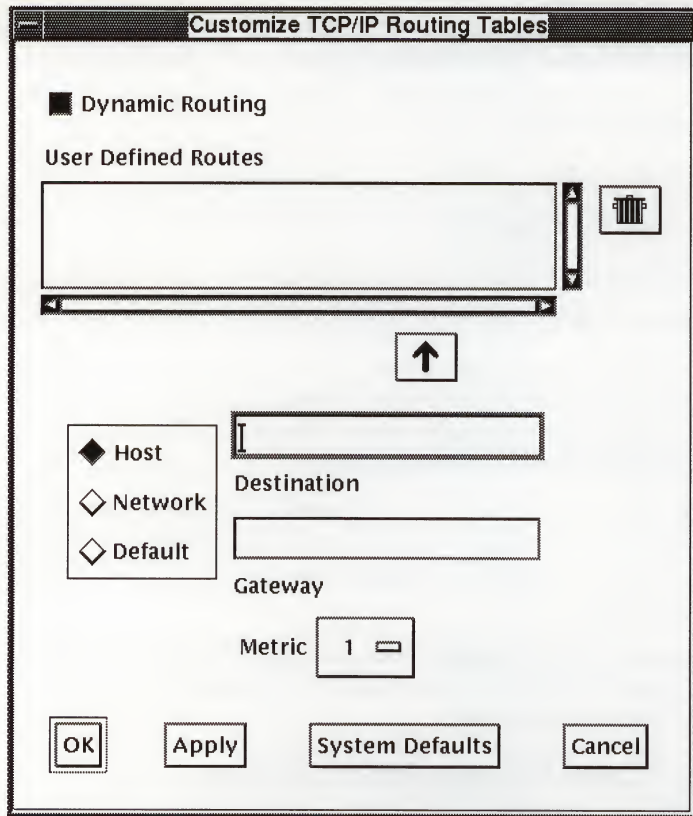
### 7.2.6 Changing Your TCP/IP Routing Table Settings

You can enter TCP/IP routes from your network to hosts on other networks. You can also enable or disable dynamic routing to automatically update the network routing table. After you save your settings, you can view these and other TCP/IP routes in the TCP/IP Routes dialog box (Section 10.3).

To enter your routes, choose the Communications submenu from the Terminal Manager window's Customize menu. Then choose TCP/IP Routing Tables... to display the TCP/IP Routing Tables dialog box:

## Customizing Your System

### 7.2 Changing System and Printer Communication Settings



LJ-01172A-RAGS

From the Customize TCP/IP Routing Tables dialog box, you can change the following settings:

#### ☐ **Dynamic Routing button**

The Dynamic Routing button lets you enable or disable the VXT software's routing daemon. This daemon listens for routing information protocol (RIP) packets and uses the packets to automatically enter, update, or delete TCP/IP routes in the TCP/IP Routes dialog box (Section 10.3).


## Customizing Your System

### 7.2 Changing System and Printer Communication Settings

#### ☐ **User Defined Routes scroll box**

The User Defined Routes scroll box lists the route destination for each entry. The gateway for each entry is stored, but not displayed.

#### **To add a route to the User Defined Routes scroll box:**

1. Specify whether the route applies to either a host or a network, by clicking on the Host, Network, or Default button. If you click on the Default button, the terminal tries to determine if the route is for a host or a network.
2. Click on the Destination box and enter the route's destination.
3. Click on the Gateway box and enter the route's gateway.
4. Click on the  button to add your route to the Routes scroll box.

#### **To remove a route:**

1. In the Routes scroll box, click on the route you want to remove.
2. Click on the trash can button.

#### ☐ **Metric button**

RIP packets contain a metric that helps to determine which gateway to use. Metric values range from 1 to 15, with smaller metrics indicating preferred paths. A 0 metric affects only the system routing table and tells the system the route is locally reachable.

### 7.2.7 Changing Your DECnet Address Settings

To communicate with other DECnet nodes, your terminal must have a unique DECnet address. From the Customize DECnet dialog box, you can enable or disable the use of the DECnet transport and enter the terminal's DECnet address.

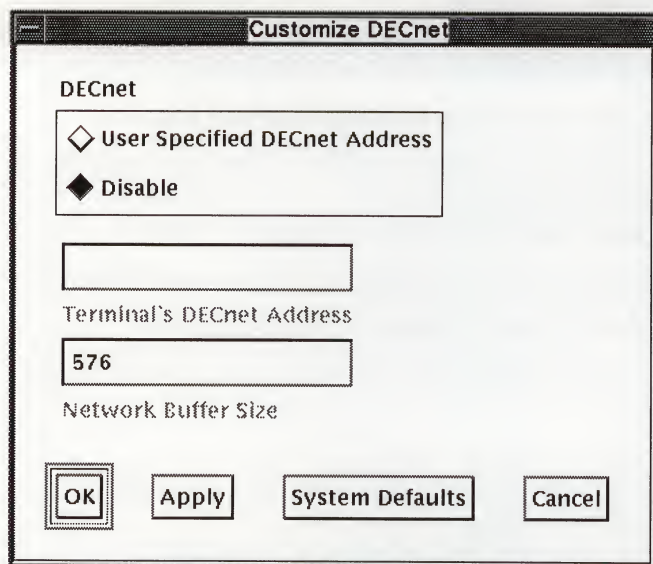
See your VXT manager for your terminal's DECnet address. The new setting takes effect when you reboot the terminal.

To enter or change your terminal's DECnet address settings, choose the Communications submenu from the Terminal Manager window's Customize menu. Then choose DECnet... to display the Customize DECnet dialog box:



## Customizing Your System

### 7.2 Changing System and Printer Communication Settings



LJ-01118-RAGS

From the Customize DECnet dialog box, you can change the following settings:

#### ☐ **DECnet**

Before you can enter an address, you must click on the User Specified DECnet Address button. You can disable the use of the DECnet transport by clicking on the Disable button.

#### ☐ **Terminal's DECnet Address**

After you click on the User Specified DECnet address button, you can enter your terminal's DECnet address in the Terminal's DECnet Address box. Click on OK to save the address and dismiss the dialog box.

You can enter your DECnet address in the long or short form:

- The long form uses a period to separate the area number and node number.  
*Example:* 61.513.
- The short form collapses the area number and node number into a single decimal value, using the formula  $(\text{area\_number} \times 1024) + \text{node\_number}$ .  
*Example:*  $(61 \times 1024) + 513 = 62977$ .

## Customizing Your System

### 7.2 Changing System and Printer Communication Settings

#### ☐ Network Buffer Size

The VXT manager chooses a DECnet network buffer size to optimize the traffic flow on a wide area network, minimizing retransmission costs while maximizing throughput. The default network buffer size 576 bytes.

You enter your network buffer size in the Network Buffer Size box. See your VXT manager for the correct size. The buffer size value must be consistent throughout your network. Click on OK to save the size and dismiss the dialog box.

### 7.2.8 Changing Your DECnet Name Translator Settings

You can use DECnet node names instead of DECnet addresses to specify host systems in Create and Customize AutoStart dialog boxes.

The terminal can check the DECnet node names you use without maintaining a local node name database. To do this, the terminal uses the DECnet Network Management Listener (NML) object (object 19) on a host system as its name translator. You specify the host system in the Customize DECnet Name Translator dialog box.

When resolving a DECnet address, the terminal connects to the NML object and issues a Network Information and Control Exchange (NICE) protocol message. This message conveys the NCP command SHOW NODE *nodename* to the host. The host responds with the DECnet address associated with the supplied node name.

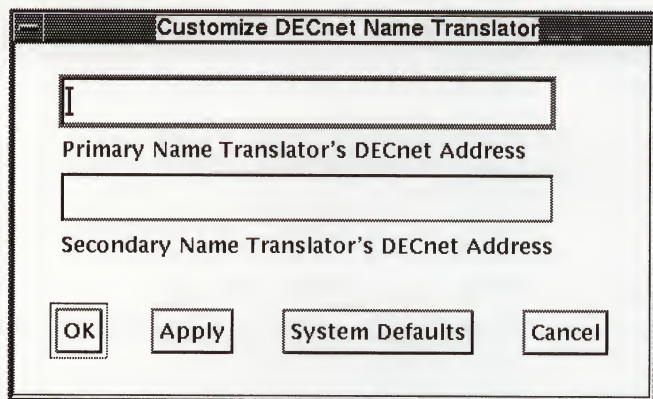
Your terminal first attempts to connect to the primary name translator. If the primary name translator is unavailable, the terminal attempts to use the secondary name translator.

See your VXT manager for the addresses of primary and secondary DECnet name translator nodes. Settings take effect immediately.

To enter or change DECnet name translator addresses, choose the Communications submenu from the Terminal Manager window's Customize menu. Then choose DECnet Name Translator... to display the Customize DECnet Name Translator dialog box:

## Customizing Your System

### 7.2 Changing System and Printer Communication Settings



LJ-01119-RAGS

From the Customize DECnet Name Translator dialog box, you can change the following settings:

☐ **Primary Name Translator's DECnet Address**

Use this box to enter the address of the host that serves as the primary name translator for DECnet addresses. Click on OK to save the address and dismiss the dialog box. You can enter your DECnet address in the long or short form (Section 3.2.3).

☐ **Secondary Name Translator's DECnet Address**

Use this box to enter the address of a secondary host for DECnet name translation, if you have one. Click on OK to save the address and dismiss the dialog box.

### 7.3 Changing Your Configuration Manager Settings

The **configuration manager** lets you customize and manage VXT 2000 windowing terminals from a single terminal. You can access the Customize dialog boxes and lock or unlock customized settings. Typically, these are system management functions. The *VXT Software Version 2.0 Installation and System Management* guide describes the configuration manager and how to use it.

If you customize settings at your terminal, they override terminal or work group settings entered in the configuration manager. You cannot customize the terminal you are working on from the configuration manager.



## Customizing Your System

### 7.3 Changing Your Configuration Manager Settings

For host-based terminals, the system manager can customize individual terminals in the configuration manager. The customized settings are written directly to your terminal. The settings take effect the next time you reboot your terminal.

For server-based terminals, the system manager can customize individual terminals or set up terminal work groups to share the same settings. Your terminal stores its customized settings on an InfoServer system rather than in the terminal. The system manager can also set up font sets on an InfoServer system for work groups to share.

To display the Configuration submenu, choose Configuration... from the Terminal Manager window's Customize menu.

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#### Note

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This selection is only available on terminals running the VXT server-based software.

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### 7.4 Changing Your Font Path Settings

A **font** is a set of character images in a particular typeface and style. The font defines how characters look. The terminal displays characters as they are defined in the selected font. A **font path** is a location pointer to a group of fonts residing on a host or server on the network.

A minimum of 22 system-default fonts are automatically downloaded with the VXT software from your host or InfoServer system. For some applications, you may need to use additional fonts not available from your host or InfoServer system. To find these fonts, the terminal needs to know their location (font path).

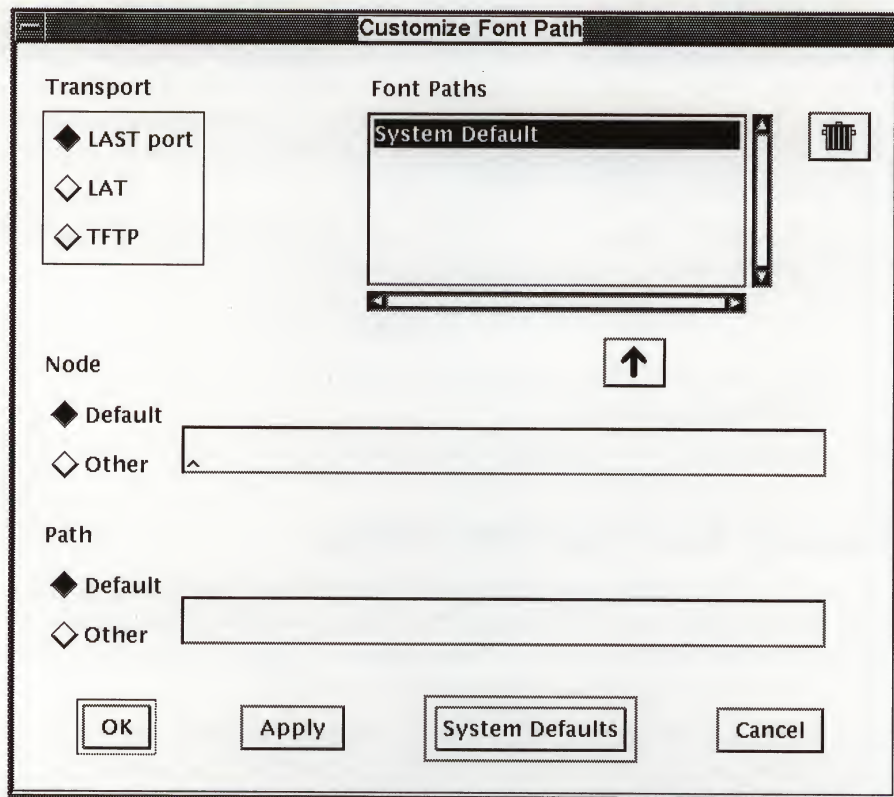
The terminal can set only one font path at a time. If you enter a font path into the Font Paths scroll box and select it for use, the terminal uses the new fonts in place of the VXT system-default fonts. When you set your font path to a UNIX, ULTRIX, or DEC OSF/1 AXP host, you automatically get any font aliases associated with the fonts in the path you select.

You can change fonts while X window or terminal window sessions are open by changing the font path. After you make changes, any new applications started in the session will use the new fonts. Applications that were already running continue to use the same fonts. One exception is changing fonts in a VXT DECterm window. See Section 8.3.1 for information on using fonts in VXT DECterm windows.

## Customizing Your System

### 7.4 Changing Your Font Path Settings

To specify a font path, choose Font Path... from the Terminal Manager window's Customize menu. The Customize Font Path dialog box looks like this:



LJ-01175A-RAGS

From the Customize Font Path dialog box, you can change the following settings:

#### ☐ Font Paths Scroll Box

The Font Paths scroll box lets you maintain a list of font paths to choose from. The terminal can use only one font path at a time. The current font path is highlighted in the scroll box. The terminal loads and uses fonts from the font service pointed to by the highlighted font path.

**If the font service is unavailable:** The VXT Message Box displays a message indicating that the attempt to set a font path failed and the terminal is using its VXT system-default fonts.

## Customizing Your System

### 7.4 Changing Your Font Path Settings

**If no fonts are found on the font service:** The VXT Message Box displays a message indicating that the set font path action succeeded. The message also lists the number of VXT system-default fonts (22) and host fonts (0) available.

#### ☐ Transport

Use the Transport box to choose the protocol used to communicate with the font service supplying the fonts.

If your fonts are on a...	Click on...
InfoServer system	The LASTport button.
OpenVMS host	The LAT button.
UNIX, ULTRIX, or DEC OSF/1 AXP host	The TFTP button.

#### ☐ Node

Use the Node box to enter the name of the host or InfoServer system where the fonts reside.

#### ☐ Path

Use the Path box to enter the directory structure on the host or InfoServer system where the fonts reside.

**To enter an InfoServer LASTport font path into the Font Paths scroll box:**

1. Click on the LASTport button in the Transport box.
2. Click on the Node box and enter the name of the InfoServer where the fonts reside.  
*Example:* VXT\_DIS1
3. Click on the Path box and enter the name of the font set.  
*Example:* APPLICATION.FONTS  
You can enter multiple font sets, separated by commas.  
*Example:* APPLICATION.FONTS,CORPORATION.FONTS
4. Click on the  button to add the font path to the Font Paths scroll box. The Node and Path boxes are cleared.
5. Click on the font path in the Font Paths scroll box. The font path is highlighted.
6. Click on Apply or OK. The terminal attempts to set the new font path.



## Customizing Your System

### 7.4 Changing Your Font Path Settings

#### **To enter a LAT font path into the Font Paths scroll box:**

1. Click on the LAT button in the Transport box.
2. Click on the Node box and enter the node name or cluster name of the host where the fonts reside.


*Example:* MARKET

3. Click on the Path box and enter the font path.

*Example:* USER1:[FONTS.100DPI.FONTS]

You can also enter multiple directory paths, separated by a comma.

*Example:* USER1:[FONTS.100DPI.FONTS],USER1:[FONTS.75DPI.FONTS]

4. Click on the  button to add the font path to the Font Paths scroll box. The Node and Path boxes are cleared.
5. Click on the font path in the Font Paths scroll box. The font path is highlighted.
6. Click on Apply or OK. The terminal attempts to set the new font path.

#### **To enter a TFTP font path into the Font Paths scroll box:**

1. Click on the TFTP button in the Transport box.
2. Click on the Node box and enter the name or IP address of the host where the fonts reside.


*Example:* MARKET or 12.345.678.901

3. Click on the Path box and enter the font path.

*Example:* /usr/lib/X11/fonts/decwin/100dpi/fonts.dir

You can also enter multiple directory paths, separated by commas.

*Example:* /100dpi/fonts.dir,/75dpi/fonts.dir

4. Click on the  button to add the font path to the Font Paths scroll box. The Node and Path boxes are cleared.
5. Click on the font path in the Font Paths scroll box. The font path is highlighted.
6. Click on Apply or OK. The terminal attempts to set the new font path.

#### **To remove a font path:**

1. In the Font Paths scroll box, click on the font path you want to remove.
2. Click on the trash can button.

### **About Setting a Font Path**

The terminal tries to set a font path when you

- Turn on the terminal
- Reset, reboot, or shutdown the terminal from the Session menu
- Click on OK or Apply in the Customize Font Path dialog box

Before the terminal can set a font path, the font server must become known to the terminal. The terminal looks for the font server for 2 minutes. During this time, the terminal displays a clock cursor causing all terminal activity to halt until the fonts are loaded into the terminal.

If the font server does not become known within 2 minutes, the VXT Message Box displays a message indicating that the set font path action failed and the terminal is using the VXT system-default fonts.

After the font server is known, the terminal tries to connect to the font server and load the fonts. Loading the fonts into the terminal takes less than a minute. When the fonts become available, the VXT Message Box displays a message indicating the set font path action succeeded and listing the number of VXT system-default fonts and host fonts available.

If the font server is known but the terminal cannot find the fonts, the VXT Message Box displays a message indicating 0 host fonts are available.

### **Tips on Setting Font Paths**

- The required time to set a font path depends on how many fonts are in the font path. To reduce the time, point only to the files needed for your application.
- In a mixed LAT and TCP/IP environment, use a LAT system for faster font service after a font path has been set. A LAT/Master node can set a font path much faster than a non-LAT/Master node.

## **7.5 Changing Your X Server Settings**

The Customize X Server dialog box lets you

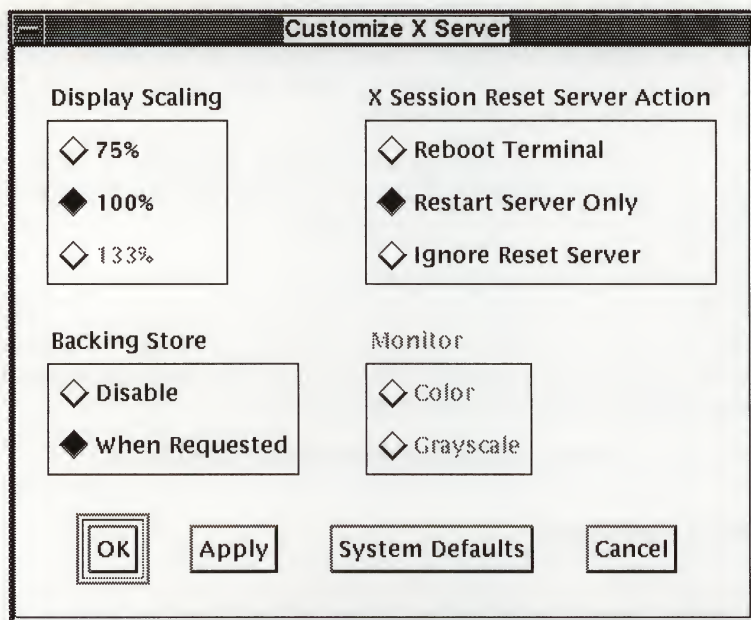
- Choose whether or not to reset the server or reboot the terminal's software when you end an X session.
- Scale display fonts to emulate a 75/dots inch display on a 100 dots/in monitor, or a 100 dots/inch display on a 75 dots/inch monitor
- Set an 8-plane terminal to use color or gray scale settings.

## Customizing Your System

### 7.5 Changing Your X Server Settings

When you end an X session on an OpenVMS system, resetting the server will end *all* open sessions on the terminal. If you do not reset the server, you can end an X session without affecting other open sessions.

To change your X server settings, choose X Server... from the Terminal Manager window's Customize menu. The Customize X Server dialog box looks like this:



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#### ☐ Backing Store

The backing store function improves the time needed to restore a window from an icon, but may consume more memory. Normally, this function is available when requested by applications. The Graphics Option dialog box in VXT DECterm windows also has a Backing Store button (Section 8.8).

#### ☐ Display Scaling

The display scaling option lets you adjust the font size displayed on your terminal to resemble a 75 dots/inch or 100 dots/inch display. Use the 75% button if you have a 100 dots/inch monitor and want your display to look like a 75 dots/inch monitor. Use the 133% button to make a 75 dots/inch monitor display look like a 100 dots/inch monitor display. Your new setting takes effect when you restart the terminal.



☐ **X Session Reset Server Action**

Normally, the terminal restarts the X server when you quit from an X session. If you end an X session on an OpenVMS system, restarting the X server causes the terminal to end all open sessions.

If you click on the Ignore Reset Server button, you can end an OpenVMS X session without ending other open sessions.

If you click on the Reboot Terminal button, the terminal reloads the VXT software when you end an X session.

Your new setting takes effect when you click on Apply or OK.

☐ **Monitor**

You can choose a gray scale or color setting for an 8-plane terminal. These buttons are dimmed on monochrome terminals. Your new setting takes effect when you restart the terminal.

## **7.6 Changing Your Boot Settings for VXT Software**

The Customize Boot dialog box lets you specify a VXT software image and how to load it. You can specify

- VXT software or VXT EX software
- Host-based or server-based mode of operation

You can also turn the following options on or off:

- X image extension, for working with XIE software to display graphics
- MOP trigger feature, for booting the terminal from a remote system

Your new Customize Boot settings take effect when you reboot the terminal. When a loading process succeeds, the terminal saves the successful method in local memory. The next time you reboot the terminal, it attempts to use the same method. When you save your settings in the Customize Boot dialog box, they override any previously saved settings.

Your booting options depend on what type of systems in your network have VXT software and how your system manager has configured them to work with VXT 2000 windowing terminals. For example, your system manager can enter boot settings for your terminal in a file stored on a host system.

You can also enter boot commands at the terminal's >>> prompt. See Section 7.6.5.

---

#### Caution

---

Before you change settings in the Customize Boot box, you should understand how and when the terminal loads its software.

---

#### 7.6.1 Overview

##### How Does the Terminal Load VXT Software?

Your terminal operates in a computer network. The terminal loads its VXT software from a host computer system or InfoServer system in the network. To begin the loading process, the terminal sends out a sequence of requests on the network for the *first available* host system or InfoServer system that has VXT software or the VXT loader file. The VXT loader file is for server-based operation only.

The terminal sends each request by using a communication transport. The terminal can communicate with systems that use the maintenance operations protocol (MOP) or the Internet protocol (IP) transport.

By default, the terminal loads its software from one of these systems:

- A host system that your system manager has preconfigured  
*VXT Software Version 2.0 Installation and System Management* provides instructions to configure systems.
- An InfoServer system  
If your network has an InfoServer system with VXT software, you can use your terminal without a system manager having to configure a host system.

##### When Does the Terminal Load VXT Software?

Booting is the process of loading a system's software and bringing it to an operable state. The terminal tries to **boot** after you

- Turn on the terminal and the terminal's self-test succeeds
- Restart the terminal by choosing the Reboot or Shutdown menu item from the Session menu
- Press one of these key sequences to reboot the terminal:

ANSI (LK401) keyboard

Ctrl+left Alt+keypad .

PC (LK443/LK444) keyboard

Ctrl+Alt+keypad .

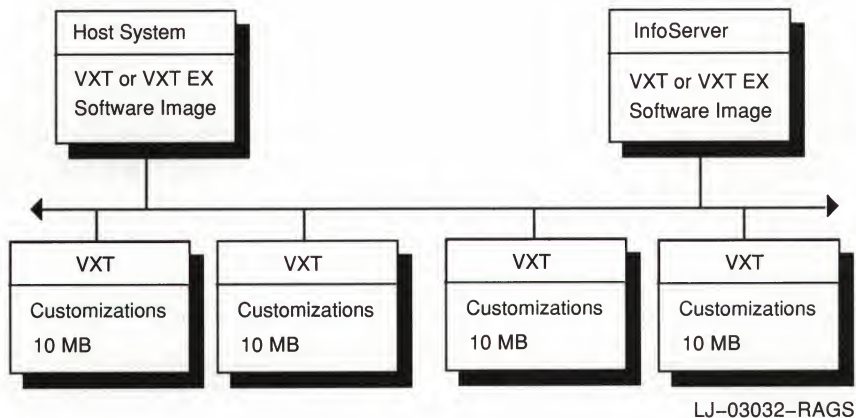
Short ANSI (LK421) keyboard

Ctrl Alt Function Extend .

## 7.6.2 Using Host-Based Operation

The terminal can load a VXT or VXT EX software image directly from a host system, using the MOP or IP protocol. You can also load a VXT or VXT EX software image in host-based mode from an InfoServer system; however, the terminal does not make use of the InfoServer's memory services in host-based mode.

When you load a VXT or VXT EX software image in **host-based** mode, the terminal stores all of your customizations in its nonvolatile memory. For host-based operation, the terminal needs at least 10 megabytes of memory installed.



### Setting Up a Host System

Your system manager can preconfigure a host system that uses MOP or IP to load a host-based VXT software image into your terminal. *VXT Software Version 2.0 Installation and System Management* describes how to preconfigure systems.

**If you use IP** The system manager must preconfigure the host system. *VXT Software Version 2.0 Installation and System Management* describes how to add a line item to the `/etc/bootptab` file listing each terminal's Ethernet address, IP address, and the VXT software image file or VXT loader file (for server-based operation).

**If you use MOP** The system manager can preconfigure the host system or InfoServer system, or you can enter the name of a VXT software image file in the Customize Boot dialog box.



## Customizing Your System

### 7.6 Changing Your Boot Settings for VXT Software

#### Specifying a Host-Based Image in the Customize Boot Dialog Box

If your system manager has not preconfigured a host system or InfoServer system to load your terminal, you can specify a host-based VXT or VXT EX software image in the Customize Boot dialog box, as follows.

1. Display the Customize Boot dialog box (Section 7.6.4).
2. In the Primary Boot box, click on the MOP button.
3. In the MOP Boot File box, click on the Other button. Enter the name of the VXT or VXT EX software image file.

Enter...	To load this image...
VXT Version 2.0 software provides two VXT software image files:	
VXT020	VXT software image
VXTEX020	VXT EX software image
Earlier versions of VXT software used separate software images to support monochrome and color/gray scale terminals:	
VXTMP00nn0	VXT host-based, monochrome image
VXTSP00nn0	VXT host-based, color or gray scale image
VXTMPI0nn0	VXT host-based, monochrome image with XIE support
VXTSPI0nn0	VXT host-based, color or gray scale image with XIE support
nn is the version number. For example, 12 is Version 1.2.	

4. Click on the OK button to save your setting and dismiss the dialog box.
5. In the Terminal Manager window, click on the Session menu.
6. In the Session menu, click on the Reboot menu item to reboot the terminal.  
The terminal loads the specified VXT or VXT EX software image from the *first available* host system or InfoServer system that has the software.

#### 7.6.3 Using Server-Based Operation

When you load a VXT software image file from an InfoServer system, you can choose to operate in **server-based** mode or host-based mode (Section 7.6.2).

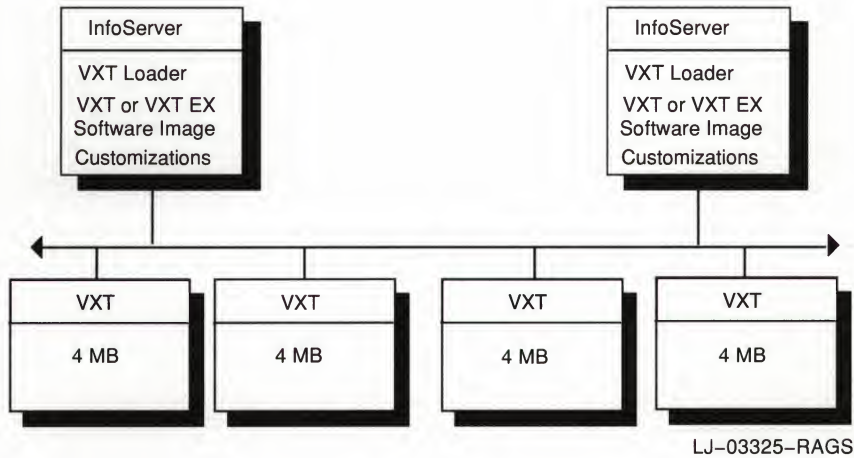
In server-based mode, the terminal stores its customizations on an InfoServer system. The InfoServer system also performs certain memory functions for the terminal, so the terminal needs only 4 megabytes of installed memory.

## Customizing Your System

### 7.6 Changing Your Boot Settings for VXT Software

In server-based mode, the terminal takes two steps to load a VXT or VXT EX software image:

1. The terminal loads a VXT loader file from an InfoServer system or host system, using the MOP or IP protocol.
2. The VXT loader file loads the VXT software image file from an InfoServer system, using the LASTport Version 3.1 protocol.



#### Plug and Play Operation

If you have an InfoServer with VXT software, the terminal can normally load the software without any need to configure a host system or use the Customize Boot dialog box. By default, the terminal looks for a VXT loader file named VXTLDR, which is supplied with VXT software kits for InfoServer systems. By default, the VXT loader first solicits the network for the full-function VXT software image; if the VXT software image is not available, the VXT loader solicits for the VXT EX image.

---

#### Note

---

If your InfoServer system is on the other side of a network bridge that filters MOP messages, your system manager must install the VXT loader file on a host system. Your system manager can preconfigure the host to load the file into the terminal. After the terminal loads the VXT loader file, the VXT loader file loads the VXT software image from the InfoServer system.

---

## Customizing Your System

### 7.6 Changing Your Boot Settings for VXT Software

#### Specifying a Server-Based Image in the Customize Boot Dialog Box

If you want to load a particular VXT or VXT EX software version in server-based mode, you can use the Customize Boot dialog box.

1. Display the Customize Boot dialog box (Section 7.6.4).
2. In the Primary Boot box, click on the MOP button.
3. In the MOP Boot File box, click on the Other button.

Enter the name of the VXT loader file. The default name is **VXTLDR**.

If needed, you can specify the loader supplied with a particular VXT software version. Normally you do not need to specify a version, unless you are loading a new version of VXT software that has not been made the default on your network yet. For example, if VXT Version 1.3 is the default version and you want to load VXT Version 2.0, you would specify the loader for VXT Version 2.0.

Enter...	To use this loader...
VXTLDR	Default version on your network
VXTLDR020	VXT Version 2.0 loader
VXTLDR0130	VXT Version 1.3 loader
VXTLDR1	VXT Version 1.3 loader (for VXT 2000+ terminals)
VXTLDR0120	VXT Version 1.2 loader

#### VXT Version 2.0 Requirements

To load the VXT Version 2.0 software image, you must use the VXT loader file supplied with the VXT Version 2.0 or VXT Version 1.3 software kit.

To load the VXT EX Version 2.0 software image you must use the VXT loader file supplied with the VXT Version 2.0 software kit.

4. In the Secondary Boot box, choose the type of VXT software you want to use. Click on the VXT Software button or the VXT EX button.
5. In the Version box, click on the Default button if you want to load the default version of VXT or VXT EX software on your network.



## Customizing Your System

### 7.6 Changing Your Boot Settings for VXT Software

Click on the Other button if you want to specify a VXT or VXT EX version other than the default. The terminal displays the letters VXT or VXT EX in front of the box. Enter the value for the version number (three digits for Version 2.0, four digits for earlier versions).

Enter...	To load this version...	
	VXT	VXT EX
020	2.0	2.0
0130	1.3	—
0120	1.2	—
0110	1.1	—
0100	1.0	—

6. Click on the OK button to save your setting and dismiss the dialog box.
7. In the Terminal Manager window, click on the Session menu.
8. In the Session menu, click on the Reboot menu item to reboot the terminal.  
The terminal loads the VXT loader file from the *first available* system.

#### About Customizations and Loading

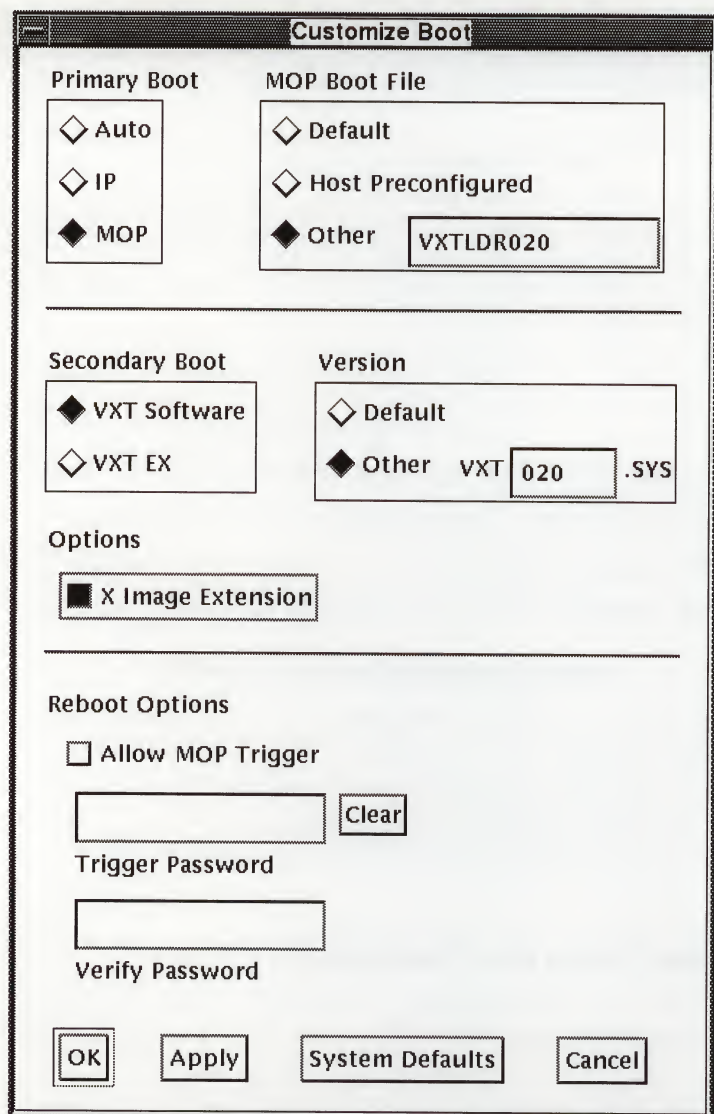
If you have several InfoServer systems with VXT software, your terminal always loads the VXT software from the first available system. However, your customizations are always stored on the same InfoServer system; therefore, your terminal does not necessarily use the same system to load software and store customizations.

#### 7.6.4 Customize Boot Dialog Box Description

To view or change your boot settings, choose Boot... from the Terminal Manager window's Customize menu. The Customize Boot dialog box looks like this:

## Customizing Your System

### 7.6 Changing Your Boot Settings for VXT Software



The "Customize Boot" dialog box is divided into several sections. The "Primary Boot" section has three radio buttons: "Auto", "IP", and "MOP", with "MOP" selected. The "MOP Boot File" section has three radio buttons: "Default", "Host Preconfigured", and "Other", with "Other" selected and the text "VXTLDR020" in the adjacent text box. The "Secondary Boot" section has two radio buttons: "VXT Software" (selected) and "VXT EX". The "Version" section has two radio buttons: "Default" and "Other", with "Other" selected and the text "VXT 020 .SYS" in the adjacent text box. The "Options" section has a checked checkbox for "X Image Extension". The "Reboot Options" section has an unchecked checkbox for "Allow MOP Trigger", a text box with a "Clear" button, a "Trigger Password" label with an empty text box, and a "Verify Password" label with an empty text box. At the bottom are four buttons: "OK", "Apply", "System Defaults", and "Cancel".

**Customize Boot**

**Primary Boot**

☐ Auto

☐ IP

☒ MOP

**MOP Boot File**

☐ Default

☐ Host Preconfigured

☒ Other VXTLDR020

---

**Secondary Boot**

☒ VXT Software

☐ VXT EX

**Version**

☐ Default

☒ Other VXT 020 .SYS

**Options**

☒ X Image Extension

---

**Reboot Options**

☐ Allow MOP Trigger

Clear

**Trigger Password**

**Verify Password**

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From the Customize Boot dialog box, you can change the following settings:

## Customizing Your System

### 7.6 Changing Your Boot Settings for VXT Software

#### ☐ **Primary Boot**

Normally, the terminal alternates between using MOP and IP on attempts to boot the VXT software image file (host-based mode) or VXT loader file (server-based mode). To use IP only, click on the IP button. To use MOP only, click on the MOP button.

#### ☐ **MOP Boot File**

If you use MOP, the MOP Boot File box lets you specify a host-based VXT software image file (from a host or InfoServer system) or a VXT loader file. The VXT loader file is for loading a server-based VXT software image.

**Default** By default, the terminal looks for the VXT loader file on an InfoServer system or host. The terminal repeats this sequence using different versions of the MOP protocol.

**Host Preconfigured** The terminal first looks for any host system using MOP that has been preconfigured to load the terminal with VXT software. If it does not find a host, the terminal looks for the VXT loader file on an InfoServer system or host. The terminal repeats this sequence using different versions of the MOP protocol.

*VXT Software Version 2.0 Installation and System Management* describes how your system manager can add your terminal's Ethernet address and the desired host-based VXT software image file or VXT loader file to a system database.

If you use MOP: OpenVMS system managers use the Network Control Program (NCP), and ULTRIX system managers use the `addnode` utility.

**Other** This setting lets you specify a host-based VXT software image file or VXT loader file. The image or loader file can be on a host or InfoServer system. Omit the `.SYS` file extension.

The file should be in a default MOP directory. For example:

On OpenVMS systems—`MOM$SYSTEM`

On ULTRIX systems—`/usr/lib/mop` on the local subnet

`VXTLDR` is the default name of the VXT loader file. If you enter the file name `VXTLDR`, any MOP service with the load file can respond and supply the file to the terminal. The VXT loader uses the LASTport Version 3.1 protocol to load the system image specified in the Secondary Boot and Version fields.

Typically, the terminal uses the VXT loader file from the InfoServer system that supplies the VXT software image. However, if there is a bridge that filters MOP requests between the terminal and InfoServer system, the system manager should make sure the VXT loader file is available on a host system in the same network segment as the terminal.



## Customizing Your System

### 7.6 Changing Your Boot Settings for VXT Software

#### ☐ **Secondary Boot**

When you load a server-based VXT software image from an InfoServer system, you use the Secondary Boot box to choose VXT software or VXT EX software.

**Version** You can use the default version of your Secondary Boot choice (VXT Software or VXT EX) or specify a version in the Other box. If you specify a version, make sure a VXT software image file with that name is available on an InfoServer system.

#### ☐ **Options: X Image Extension**

VXT software images include an X image extension (XIE) capability that allows server-based and host-based terminals to work with XIE software. The VXT EX software image does not include XIE capability.

Normally, the terminal's XIE capability is turned on. If you turn this feature off and on, you must reboot the terminal before your new setting takes effect. Appendix C describes how to use the terminal with XIE.

VXT 2000 terminals with a system box and VXT 2000 model VX227 terminals can use an optional image accelerator board to increase the speed at which the terminal displays XIE bitonal images. However, you do not need the image accelerator board to use the terminal's XIE capability.

#### ☐ **Reboot Options**

The MOP protocol provides a trigger mechanism for rebooting a remote node. If you enable the MOP trigger feature, your terminal can be rebooted from a remote node.

**Allow MOP Trigger** Normally, the terminal ignores MOP trigger messages. To enable MOP triggering, click on the Allow MOP Trigger button.

**Trigger Password** You can also supply a password to restrict rebooting from a remote node. The MOP trigger password can be from 1 to 16 hexadecimal characters (0–9 and A–F characters). If you do not supply a password, a default value of 0 is used (equivalent to no password).

See your host system's network control program (NCP) manual or online help for more information on the syntax for triggering remote nodes.

#### 7.6.5 Entering Boot Commands to Load VXT Software

In addition to the Customize Boot dialog box, you can load VXT software from the terminal's >>> prompt.

### **Displaying the >>> Prompt**

To display the >>> prompt, you must halt your terminal. There are two ways to halt the terminal; you can use the keyboard, or you can use the halt button.

---

#### **Caution**

---

Halting the terminal closes any currently open sessions.

---

### **To display the >>> prompt from the keyboard:**

Press **Ctrl**+left **Alt**+keypad **.**. The terminal ends all sessions and begins to boot VXT software. Immediately press **Ctrl** **C** to halt the booting sequence and display the >>> prompt.

### **To display the >>> prompt using the halt button:**

Quickly press and release the halt button on the rear of the terminal. The terminal halts all activity and displays a >>> prompt.

- For VXT 2000+/VXT 2000 terminals with a system box: The halt button is next to the indicator lights on the rear of the system box.
- For VXT 2000 model VX225/VX227 terminals: The halt button is below the keyboard connector on the rear of the monitor.

### **Loading VXT Version 2.0 Software**

To load VXT Version 2.0 software, enter the command sequence for host-based or server-based operation:

#### **Host-Based Mode**

```
>>> B/100 Return  
Bootfile: VXT020 Return
```

#### **Server-Based Mode**

```
>>> B/101 Return  
Bootfile: VXTLDR Return  
VXTLDR> VXT020.SYS Return
```

### **Loading VXT EX Version 2.0 Software**

To load VXT EX Version 2.0 software, enter the command sequence for host-based or server-based operation:

#### **Host-Based Mode**

```
>>> B/100 Return  
Bootfile: VXTEX020 Return
```

## Customizing Your System

### 7.6 Changing Your Boot Settings for VXT Software

#### Server-Based Mode

```
>>> B/101 
Bootfile: VXTLDR 
VXTLDR> VXTEx020.SYS 
```

#### Loading Earlier VXT Software Versions

Earlier versions of VXT software used separate software images to support monochrome and color/gray scale terminals. Enter the command sequence for host-based or server-based operation.

#### Host-Based Mode

```
>>> B/100 
Bootfile: host_image 
```

Enter <i>host_image...</i>	To load this image...
VXTMP00nn0	VXT host-based, monochrome image
VXTSP00nn0	VXT host-based, color or gray scale image
VXTMPI0nn0	VXT host-based, monochrome image with XIE support
VXTSPI0nn0	VXT host-based, color or gray scale image with XIE support

*nn* is the version number. For example, *12* is Version 1.2.

#### Server-Based Mode

```
>>> B/101 
Bootfile: VXTLDR 
VXTLDR> server_image 
```

Enter <i>server_image...</i>	To load this image...
VXTMV00nn0.SYS	VXT server-based, monochrome image
VXTSV00nn0.SYS	VXT server-based, color or gray scale image

*nn* is the version number. For example, *12* is Version 1.2.





## Customizing VXT DECterm Windows

This chapter describes how to set many VXT DECterm window features to suit your personal preference, by using the Options menu in a VXT DECterm window. Initially, the features use factory-default settings that work with many host systems. You can make changes to the settings and save them for all future sessions.

The chapter covers the following major topics:

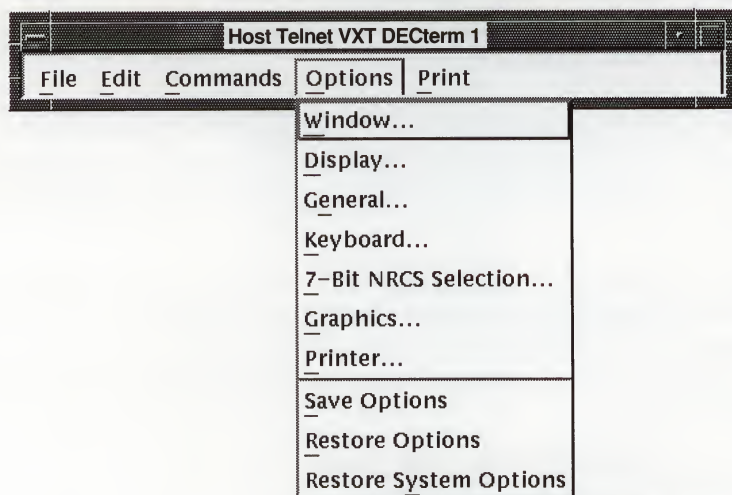
- Displaying the Options Menu
- Saving and Restoring VXT DECterm Option Settings
- Changing Your Window Settings
- Changing Your Display Settings
- Changing Your General Operating Features
- Changing Your Keyboard Features
- Choosing National Replacement Character Sets
- Changing Your Graphics Display Settings
- Changing Your Printer Settings

## Customizing VXT DECterm Windows

### 8.1 Displaying the Options Menu

## 8.1 Displaying the Options Menu

To display the Options menu, click on Options in the VXT DECterm window's menu bar. The Options menu looks like this:



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#### Note

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A system manager can customize settings for terminals and work groups. The system manager can also lock or unlock access to menu items on the Options menu.

---

When you choose a menu item from the Options menu, the terminal displays a dialog box with the feature settings for that topic. In dialog boxes, shaded buttons indicate the current settings. You can examine the settings and change them if desired. You can use the last three menu items to save your settings, restore your last saved settings, or restore the system-default settings.

## **8.2 Saving and Restoring VXT DECterm Option Settings**

Initially, the terminal uses the system-default settings for each VXT DECterm window you create. If you make changes to option settings and save them, the terminal applies your saved settings to each new VXT DECterm window you create. To make changes to VXT DECterm settings and save them:

1. Make your changes in a VXT DECterm Options dialog box, then click on the OK or Apply button. The changes are applied to the current VXT DECterm window.
2. Click on the Save Options menu item in the Options menu. The settings are saved for future VXT DECterm windows.

### **Applying Changes in a Dialog Box**

Each VXT DECterm Options dialog box has three push buttons for applying or dismissing new settings in that box:

---

<b>Click on ...</b>	<b>To ...</b>
OK	Apply new settings for the current session and dismiss the dialog box.
Apply	Apply new settings for the current session without dismissing the dialog box.
Cancel	Dismiss the dialog box without changing any settings. If you made any changes without applying them, clicking on the Cancel button cancels those changes.

---

Some option settings do not take effect until you open a new VXT DECterm window.

### **OK and Apply Do Not Save VXT DECterm Options**

Note that the OK and Apply buttons work differently in VXT DECterm Options dialog boxes than in the Terminal Manager window's Customize dialog boxes. In the Customize dialog boxes, the OK and Apply buttons save the feature settings for future use.



## Customizing VXT DECterm Windows

### 8.2 Saving and Restoring VXT DECterm Option Settings

#### Saving or Restoring Option Settings

To save or restore settings for future sessions, choose from the following menu items on the Options menu:

Choose ...	To ...
Save Options	Save your current option settings for use in all future sessions.
Restore Options	Recall the last option settings you saved with the Save Options menu item. Choose the Restore Options menu item if you want to reset any option settings that you changed temporarily, but did not save. To see changes to specific settings, display the dialog box for those settings.
Restore System Options	Restore the terminal's default option settings. To see changes to specific settings, display the dialog box for those settings.

If you have changed some settings and want to use or view the factory-default settings for your VXT DECterm Option dialog boxes, click on the Restore System Options menu item in the Options menu. If you saved some customized settings but decide you want to return to the factory-default settings for future sessions, click on Restore System Options and Save Options; remember that this clears the customized settings you saved.

#### Applications May Customize Some Settings

Some application software that you use may also set certain window features. Programmers can use control sequences in their applications to customize most DECwindows features from the host system. This provides the individual application with more control.

#### ReGIS and Sixel Graphics

VXT DECterm windows emulate the VT300 series terminal, so you can display ReGIS and sixel graphics on the terminal. You can also use the remote DECterm application available under a host session manager to display ReGIS and sixel graphics.

## 8.3 Changing Your Window Settings

You can use the Window Options dialog box to control the size of the VXT DECterm window, by choosing the number of rows and columns displayed. You can also control such features as the window title and the font size (big or small) used to display characters. You can use an alternative font on your host system or InfoServer system, if the font meets certain requirements.

Before you resize a VXT DECterm window in the Window Options dialog box, you should understand how host system and window manager settings also affect the window's operation.

### Factors Affecting the VXT DECterm Window Size

Three factors affect the display of a VXT DECterm window:

- The Terminal Size setting in the Window Options dialog box
- The host's settings for the DECterm terminal size
- Any adjustments you make to the window size, using a local or remote window manager (such as maximizing the window or using the window border to stretch the window)

The normal Terminal Size in the Window Options dialog box is 24 rows by 80 columns. Keeping the Terminal Size matched with the host's setting ensures the proper display of applications such as editors and mail. If you use unmatched settings, be aware that some application displays may be affected.

If you change the Terminal Size, you can make the same adjustments on the host. The commands for setting the DECterm window size on the host depend on the operating system.

For example, on OpenVMS hosts you can enter the `SHOW TERMINAL` command to check the Page and Width settings. These settings should match the Terminal Size row and column settings. You can adjust the host settings with the `SET TERM/PAGE=n` and `SET TERM/WIDTH=n` commands.

The Auto Resize Terminal feature in the Window Options dialog box determines whether or not the Terminal Size automatically changes when you adjust the window with a window manager. Normally this feature is off, so the Terminal Size remains matched with the host's settings. For example, when you click on the window border and stretch the window, the number of rows and columns within the window does not change.

## Customizing VXT DECterm Windows

### 8.3 Changing Your Window Settings

#### Using the Window Options Dialog Box

To view or change your VXT DECterm window settings, choose Window... from the Options menu. The terminal displays the Window Options dialog box:

**DECterm: Window Options**

☐ Auto Resize Terminal

☒ Auto Resize Window

**Terminal Size**

24 Rows 80 Columns

◇ Normal Font (80 Columns) 24 80

◇ Condensed Font (132 Columns) 48 132

◆ Normal/80, Condensed/132 72

◇ Big Font ◆ Default

◇ Other --Terminal--\*--\*--\*--\*--180--\*

◆ Little Font ◆ Default

◇ Other --Terminal--\*--\*--\*--\*--140--\*

◇ German Standard Font ◆ Default

◇ Other --Terminal--\*--\*--\*--\*--GS--\*--140--\*

hosty Telnet VXT DECterm 1

hosty Telnet VXT DECterm 1

Window Title Icon Name

OK Apply Cancel

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From the Window Options dialog box, you can change the following features:



#### ☐ **Auto Resize Terminal**

Normally, changing the window size does not change the number of rows and columns displayed. If you click on Auto Resize Terminal, the terminal automatically adjusts the number of display rows and columns when you or your application software changes the window size.

#### ☐ **Auto Resize Window**

Normally, the terminal automatically resizes the window when the number of rows and columns changes. You can turn this feature on or off by clicking on Auto Resize Window. If you display a large number of rows and columns when this feature is off, some information may be outside the window boundary.

#### ☐ **Terminal Size**

The default size of the VXT DECterm window is 24 rows and 80 columns. You can choose from standard values or enter your own value:

- Standard values: Choose 24, 48, or 72 rows and 80 or 132 columns.
- Your own value: Click on the Rows box and enter a number from 1 to 99. Click on the Columns box and enter a number from 9 to 254.

#### ☐ **Normal Font, Condensed Font**

Normally, the terminal displays characters in a font suitable for the display width—a normal font for 80 columns, a condensed font for columns. You can also choose to use the normal font or condensed font at all times, by clicking on the Normal Font (80 Columns) button or Condensed Font (132 Columns) button. The condensed font lets you display more characters in a small window.

#### ☐ **Window Title**

You can choose a unique window title of up to 30 characters for each window you open. The default title is

*Host Transport VXT DECterm n*

- *Host* is the host name, service name, or IP address of the host system.
- *Transport* is the method used to connect to the host system —Telnet, LAT, DECnet, or Serial.
- *n* is the number of the window. VXT DECterm windows are numbered sequentially in the order you open them during a session.

Programmers can change the title by using the following command:

```
<OSC>21;title_string<ST>
```

## Customizing VXT DECterm Windows

### 8.3 Changing Your Window Settings

If you change the title, the terminal stops numbering windows in the session. The only way to restart numbering is to choose the Restore Systems Options menu item from the Options menu. In doing so, all VXT DECterm settings are restored to their system-default settings.

#### ☐ Icon Name

You can choose a unique icon name to identify each window you reduce to an icon. This option works the same as the Window Title option.

Programmers can change the icon name with the following command:

```
<OSC>2L;icon_string<ST>
```

#### ☐ Big Font, Little Font, German Standard Font

You can display characters in a little font, big font, or German standard font. Normally, the terminal displays characters in its little font, which is a 14-point font (10-point font on 100 dots/inch monitors). The big font is an 18-point font.

As an alternative, you can specify a suitable font on your host system or InfoServer system. In any case, you can display only one font in a window at a time. You may use a different font in each VXT DECterm window.

#### **To choose one of the terminal's default fonts:**

1. Click on the Big Font, Little Font, or German Standard Font button.
2. Click on the Default button next to the font you chose.
3. Click on OK or Apply to see the new font in the VXT DECterm window.

#### **To save a font selection for future use:**

Click on the Save Options menu item in the Options menu.

### 8.3.1 Using Fonts on Your Host System or InfoServer

If you have suitable fonts on your host or InfoServer system, you can use those fonts instead of the terminal's fonts in your VXT DECterm windows. In each VXT DECterm window, you can specify an alternative big font, little font, and German standard font. You can specify fonts from different hosts or InfoServer systems.

To use alternative fonts on a host or InfoServer system, you must specify a font path and font name.

---

#### Note

---

VXT DECterm windows require specific fonts and sizes to run and display properly. Most fonts do not meet these requirements. Problems and error messages will occur if VXT DECterm cannot find the proper fonts.

---

#### Step 1: Specify a Font Path


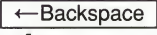

Use the Customize Font Path dialog box in the Terminal Manager window (Section 7.4).

You can set only one font path at a time. You can change font paths while a VXT DECterm window is running. Applications currently running continue to use the old font path.

#### Step 2: Enter the Font Name in the Window Options Dialog Box

You can specify an alternative font for each of standard font choices: big font, little font, and German standard font. You can specify different fonts in each VXT DECterm window you create. You can also change fonts while a VXT DECterm window is displayed.

To save your font settings, click on Save Options in the Options menu. New applications will use the new font. Applications currently running will continue to use the same font.

1. Click on the Big Font, Little Font, or German Standard Font button.
2. Click on the Other button next to font you chose in step 1.
3. Clear the text in the box next to the Other button. Click on the box and use the  key or the  to erase all text in the box. Or drag the pointer across the text, then press the  key to erase all the text.
4. Enter the name of your font in the box. See your system manager if you need help.



## Customizing VXT DECterm Windows

### 8.3 Changing Your Window Settings

Use the following steps if your font is on an InfoServer system.

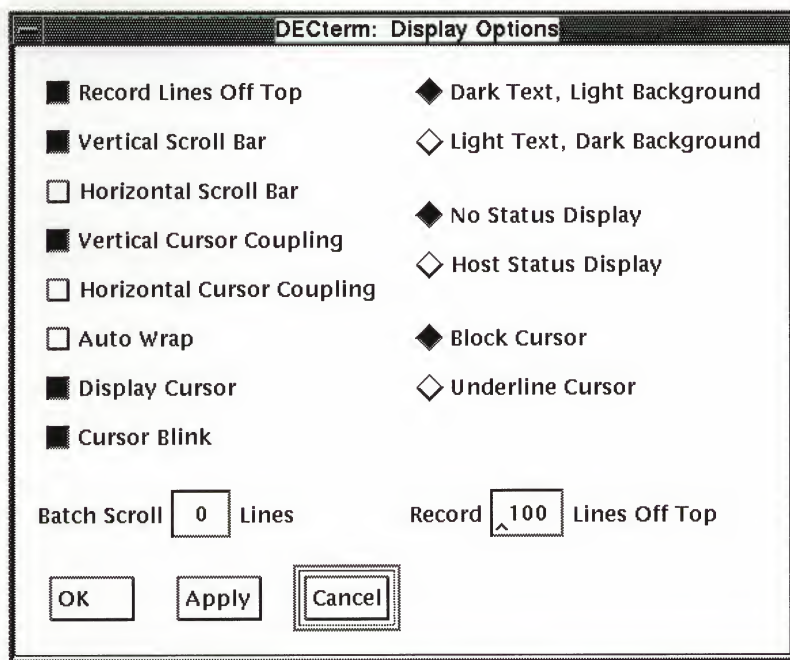
#### **To use a font on an InfoServer system:**

After you set the font path, you can use the terminal's Configuration Manager: Font Management dialog box to list the available fonts on your InfoServer system. Then you can cut and paste the font name into the DECterm Window Options dialog box.

1. In the Terminal Manager window, click on Customize in the menu bar to display the Customize menu.
2. In the Customize menu, click on Configuration... to display the Configuration submenu.
3. Click on the Font Management... menu item to display the Configuration Manager: Font Management dialog box.
4. Click on the name of the font set you want. The font set name appears highlighted in the scroll box.
5. Click on the List Contents... button to display the List Font Set Contents box.
6. In the List Font Set Contents scroll box, find the font you want. Triple click on the font.
7. Click on the DECterm Window Options dialog box. The input cursor should be blinking in the Other box that you cleared. If not, click on the Other box.
8. Click on MB2. The font name is copied to the Other box.
9. Click on Apply or OK. The terminal applies the new font to the VXT DECterm window.

## 8.4 Changing Your Display Settings

You can control display features such as the type of cursor, use of scroll bars, and appearance of text (light or dark). You can also specify how many lines to save when text is scrolled off the top of the window. To view or change your display settings, choose Display... in the Options menu. The terminal displays the Display Options dialog box:



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From the Display Options dialog box, you can change the following settings:

### ☐ Record Lines Off Top

Normally, the terminal save lines that are scrolled off the top of the VXT DECTerm window. To view these lines, use the vertical scroll bar. If you do not want to save lines that are scrolled from the display, click on the Record Lines Off Top button to turn it off. To specify the number of lines to save, use the Record  Lines Off Top box in this display box.

### ☐ Vertical Scroll Bar

Normally, the VXT DECTerm window has a vertical scroll bar. To remove the scroll bar, click on the Vertical Scroll Bar button to turn it off.

## Customizing VXT DECterm Windows

### 8.4 Changing Your Display Settings

#### ☐ **Horizontal Scroll Bar**

Normally, the VXT DECterm window does not have a horizontal scroll bar. To add a horizontal scroll bar to the bottom of the window, click on the Horizontal Scroll Bar button.

#### ☐ **Vertical Cursor Coupling**

Normally, the cursor remains in the visible display area when you change the vertical size of the window. For example, if you reduce the display from 24 rows to 5 rows, the cursor remains visible so you can enter text. Click on the Vertical Cursor Coupling button if you wish to turn vertical cursor coupling off.

#### ☐ **Horizontal Cursor Coupling**

Normally when you change the horizontal size of your window, the cursor does not automatically remain in the visible display area. For example, if you reduce the number of columns from 132 to 80, the cursor may not be visible. To turn horizontal cursor coupling on, click on the Horizontal Cursor Coupling button.

#### ☐ **Auto Wrap**

Normally, text does not automatically wrap to the next line when the cursor reaches the right margin in the window. To have text automatically wrap to the next line, click on the Auto Wrap button.

#### ☐ **Display Cursor**

Normally, the terminal displays the text cursor, which is a block or underline character. To turn the text cursor off, click on the Display Cursor button.

#### ☐ **Cursor Blink**

Normally, the text cursor blinks. To have the cursor appear steady, click on the Cursor Blink button. The terminal manager also has a Cursor Blink feature, in the Customize Keyboard dialog box. The two settings have no effect upon each other.

#### ☐ **Text and Window Background**

Normally, the VXT DECterm window displays light text with a dark background. To change the display to dark text on a light background, click on the Dark Text, Light Background button.

#### ☐ **Status Display**

If you want to display a host status line, click on the Host Status Display button. The host status line is a line at the bottom of the window where your host application software can display messages.



☐ **Cursor Style**

Normally, the terminal uses a solid block cursor to indicate the active position. To use an underline character for the cursor, click on the Underline Cursor button.

☐ **Batch Scroll Lines**

Normally, you cannot scroll lines. You can specify the number of lines you can scroll to match the window size, by entering a number in the Batch Scroll Lines box.

☐ **Record  Lines Off Top**

Normally, the terminal saves up to 100 lines that are scrolled off the top of the display. You can specify the number of lines to save (0 to 999) by using the Record  Lines Off Top box. Increasing the number of lines saved increases memory usage and may slow the window's response time.

## 8.5 Changing Your General Operating Features

You can set general operating features to match your computing environment and application software. For example, you can which of the terminal's character sets to use. To view or change general operating settings, click on General... in the Options menu. The terminal displays the General Options dialog box:

## Customizing VXT DECterm Windows

### 8.5 Changing Your General Operating Features

DECterm: General Options

<input type="checkbox"/> Newline	<input checked="" type="radio"/> VT300 Mode, 8-Bit Controls
<input type="checkbox"/> Lock UDKs	<input checked="" type="radio"/> VT300 Mode, 7-Bit Controls
<input type="checkbox"/> Lock User Features	<input type="radio"/> VT100 Mode
<input type="checkbox"/> Local Echo	<input type="radio"/> VT52 Mode
<input checked="" type="radio"/> Normal Cursor Keys	Terminal ID
<input checked="" type="radio"/> Appl Cursor Keys	<input checked="" type="radio"/> DECterm ID
<input checked="" type="radio"/> Numeric Keypad	<input type="radio"/> VT340 ID
<input checked="" type="radio"/> Application Keypad	<input type="radio"/> VT330 ID
<input checked="" type="radio"/> UPSS DEC Supplemental	<input type="radio"/> VT320 ID
<input checked="" type="radio"/> UPSS ISO Latin 1	<input type="radio"/> VT240 ID
<input checked="" type="radio"/> 8-Bit Multinational Characters	<input type="radio"/> VT220 ID
<input checked="" type="radio"/> 7-Bit NRCS Characters	<input type="radio"/> VT125 ID
	<input type="radio"/> VT102 ID
	<input type="radio"/> VT101 ID
	<input type="radio"/> VT100 ID

Answerback Message

☐ Conceal Answerback Message

OK Apply Cancel

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From the General Options dialog box, you can change the following settings:

#### ☐ **Newline**

Normally when you press the **Return** key, the cursor moves to a new line because the terminal sends a carriage return (CR) character and a line feed (LF) character. Similarly, when the terminal receives a line feed, form feed (FF), or vertical tab (VT) character, the cursor moves to the first column of the next line.

## Customizing VXT DECterm Windows

### 8.5 Changing Your General Operating Features

If you click on the Newline button, pressing **Return** sends only a carriage return, so the cursor does not move to a new line. When the terminal receives a LF, FF, or VT character, the cursor moves to the current column of the next line.

#### ☐ **Lock UDKs**

Your keyboard contains keys you can define for your own use (Chapter 12). Normally, the host system can change the function of these user-defined keys (UDKs). If you click on the Lock UDKs button, the host system cannot change your definitions.

#### ☐ **Lock User Features**

There is a set of VXT DECterm option features that users often set to their own preference, including terminal size (in Window Options), text and background color (in Display Options), and auto repeat feature for keys (in Keyboard Options). The host system can override these option settings unless you click on the Lock User Features button.

#### ☐ **Local Echo**

Normally, the terminal sends data entered at the keyboard to your host system, which may send it back to the terminal for display after processing. This is called a remote echo.

If you want to send keyboard data to both the host system and the terminal (local echo), click on the Local Echo button.

#### ☐ **Cursor Keys**

Normally, the arrow keys move the cursor by sending standard ANSI cursor control sequences. Clicking on the Application Cursor Keys button lets the arrow keys send application-specific control sequences.

#### ☐ **Keypad**

Normally, numeric keypad keys send the character shown on the key (using ASCII codes). If you click on the Application Keypad button, the numeric keypad keys send control sequences used with some applications.

#### ☐ **User-Preferred Supplemental Set (UPSS)**

If you click on the 8-Bit Multinational Characters button in this dialog box, you can choose one of two supplemental character sets to use—DEC Supplemental or ISO Latin 1 Supplemental. Both character sets feature special characters used in the major Western European languages. The ISO Latin-1 set includes a few more characters that are not included in the DEC Supplemental set.

Normally, the terminal uses the UPSS DEC Supplemental set. Click on the UPSS ISO Latin 1 button to use the UPSS ISO Latin 1 Supplemental set.



## Customizing VXT DECterm Windows

### 8.5 Changing Your General Operating Features

#### ☐ **8-Bit Multinational or 7-Bit NRCS Characters**

You can select the type of characters the terminal uses, 8-bit multinational or 7-bit national replacement characters.

Normally, the terminal uses 8-bit multinational characters. This setting supports most of today's computing environments. There are two multinational character sets available—the DEC Multinational character set and the ISO Latin Alphabet No. 1 character set. Both sets consist of the ASCII character set and their own supplemental set. To choose one of the multinational character sets, you choose their supplemental set by using the UPSS buttons in this dialog box.

Clicking on the 7-Bit NRCS Characters button lets the terminal use one of several national replacement character sets. This setting is useful in computing environments that are restricted to 7 bits. NRC sets are 7-bit character sets for the major Western European languages. When you choose this setting, the terminal uses the NRC set that matches the current Keyboard Type chosen in the Terminal Manager's Customize Keyboard dialog box (Section 6.3). You can also choose the individual NRC set by using the 7-Bit NRCS Selection menu item from the Options menu.

#### ☐ **VT Emulation Mode**

The terminal can emulate the responses of VT300 series, VT200 series, VT100 series, or VT52 text terminals to text and control functions sent from the host system. If you have application software developed for one of these terminals, you can choose the appropriate operating mode to run that software.

Normally, the terminal uses VT300 7-bit controls. In 7-bit controls mode, the terminal sends 7-bit controls and 8-bit character codes to the host. Use this mode with VT300 and VT200 applications that use 7-bit control characters.

In 8-bit controls mode, the terminal can send 8-bit controls and 8-bit character codes to the host. This mode supports VT300 and VT200 8-bit text applications.

In either VT300 mode, the terminal accepts both 7-bit and 8-bit controls from the host.

VT100 mode lets the terminal run applications that require VT100 compatibility.

VT52 mode lets the terminal run VT52 applications.

#### ☐ **Terminal ID**

The terminal sends the host system a terminal identification (ID) message to let the system know the terminal's specific operating characteristics. You can choose another terminal ID if needed. The terminal ID is also called the device attributes response.

## Customizing VXT DECterm Windows

### 8.5 Changing Your General Operating Features

#### ☐ Answerback Message

The terminal sends an answerback message to the host system when (1) you press **Ctrl F5**, or (2) the host requests the message by sending an ENQ character. Host requests do not affect screen data or require a user response. To enter an answerback message, click on the Answerback Message box. Your message can have up to 30 characters.

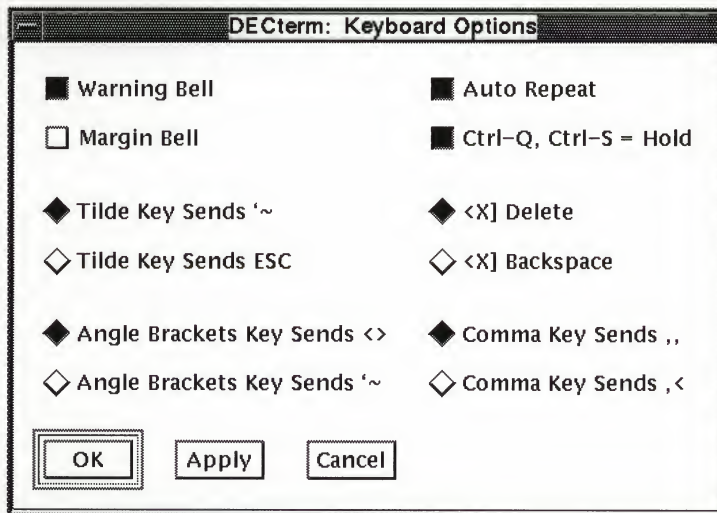
#### ☐ Conceal Answerback Message

You can conceal your answerback message by clicking on the Conceal Answerback Message button. Your answerback message is replaced with the text <concealed> in the Answerback Message box.

If you conceal the message, you can never redisplay it. If you click on the Answerback Message box, your concealed message is erased; you can enter a new message and conceal it by clicking on the Conceal button.

## 8.6 Changing Your Keyboard Features

You can turn the keyboard's warning bell and margin bell on and off. You can also control the function of the **<X>**, tilde, angle bracket, and comma keys to suit your working environment. To view or change these and other keyboard settings, choose the Keyboard... menu item from the Options menu. The terminal displays the Keyboard Options dialog box:



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## Customizing VXT DECterm Windows

### 8.6 Changing Your Keyboard Features

From the Keyboard Options dialog box, you can change any of the following settings:

#### ☐ **Warning Bell**

Normally, a warning bell sounds whenever the terminal receives a bell (BEL) character from the host system. To turn this feature off, click on the Warning Bell button.

#### ☐ **Margin Bell**

The terminal can sound a bell when the cursor approaches the right margin. Normally, the margin bell feature is turned off. To turn this feature on, click on the Margin Bell button.

#### ☐ **Tilde Key**

**North American, British, and Dutch keyboards only:** You can use the tilde key [~] to send the escape (ESC) character for control sequences. Normally, the tilde key sends an accent mark ( ` ) when unshifted and a tilde ( ~ ) when shifted. To use the tilde key as an ESC key, clicking on the `~ Key Sends ESC button.

#### ☐ **Angle Bracket Key**

**North American, British, and Dutch keyboards only:** If you use the tilde key as an ESC key, you may want to use the [ < > ] key to send the accent mark ( ` ) and tilde ( ~ ) characters. If you click on the <> Key Sends `~ button, the [ < > ] key sends the accent mark ( ` ) when unshifted and the tilde ( ~ ) when shifted.

#### ☐ **Auto Repeat**

Most keys on the keyboard automatically repeat when you hold them down. You can turn this feature off or on by clicking on the Auto Repeat button. The [Return] and [Help] keys never autorepeat.

The Terminal Manager window's Customize Keyboard dialog box also has an Auto Repeat feature. The two settings do not affect each other. To disable autorepeating in both the Terminal Manager and VXT DECterm windows, disable both settings.

#### ☐ **Ctrl-Q, Ctrl-S = Hold**

Normally, pressing [Ctrl] [S] prevents data from scrolling in a window. Pressing [Ctrl] [Q] allows scrolling to resume in the window.

You can turn this feature off or on by clicking on the Ctrl-Q, Ctrl-S = Hold button. If you turn the feature off, pressing [Ctrl] [S] or [Ctrl] [Q] have no effect on scrolling.



☐ **<X> Delete / Backspace Key**

Normally, pressing the <X> key sends a delete (DEL) character to the host application.

When you click on the <X> Backspace button, the <X> key sends a backspace (BS) character.

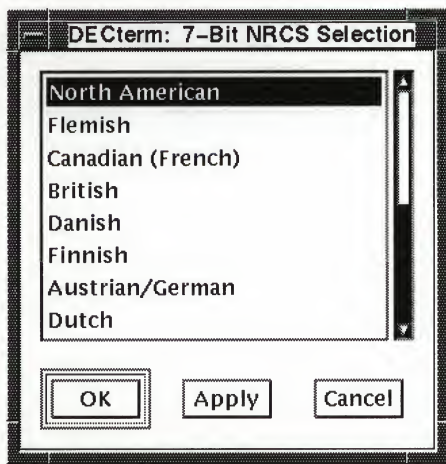
☐ **Comma Key**

**North American, British, and Dutch keyboards only:** Normally, the [,<] key sends a < character when shifted, and the [.>] key sends a > character when shifted. You can choose to have the [,<] key always send a comma and the [.>] key always send a period, whether the keys are shifted or unshifted. To turn this feature on or off, click on the ,< and .> Keys Send ,, and .. button.

## 8.7 Choosing National Replacement Character Sets

You can use 8-bit multinational character sets or 7-bit national replacement character (NRC) sets with VXT DECterm windows. You should use the type of character set that matches your computing environment. To choose the type of character set, select the General... menu item from the Options menu.

When you choose to use 7-bit character sets, the terminal automatically uses the NRC set that matches the current Keyboard Type chosen in the Terminal Manager's Customize Keyboard dialog box (Section 6.3). You can also choose an NRC set by using the Options menu. Choose 7-Bit NRCS Selection... to display the 7-Bit NRCS Selection Options dialog box:



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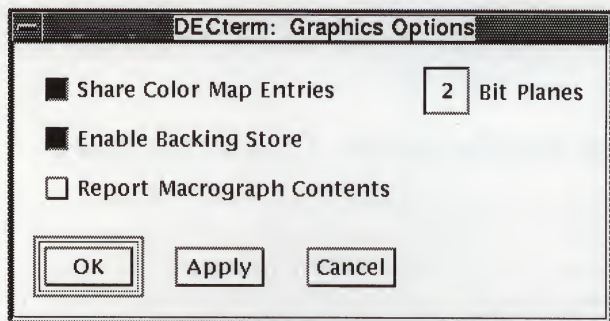
## Customizing VXT DECterm Windows

### 8.7 Choosing National Replacement Character Sets

The scroll box lists the available NRC sets. To choose an NRC set for the current window, click on a set in the scroll box and then click on the OK button.

### 8.8 Changing Your Graphics Display Settings

You can control some features that affect the display of graphics, such as color map entries. To view or change the graphic settings used with VXT DECterm windows, choose Graphics... from the Options menu. The terminal displays the Graphics Options dialog box:



LJ-01191-RAGS

From the Graphics Options dialog box, you can change the following settings:

#### ☐ **Share Color Map Entries**

Normally, color map entries are shared. This prevents the VXT DECterm window from allocating color map entries for its exclusive use. Instead, DECterm allocates shared, read-only colors out of a default color map. This means that DECterm does not need to create a private color map, which would prevent the windows from displaying in their true colors. However, it also means that DECterm colors may not match the colors used on a VT terminal.

#### ☐ **Enable Backing Store**

Backing Store improves the time needed to restore a window from an icon, but may consume more memory. The Customize X Server dialog box in the Terminal Manager window also has a Backing Store button (Section 7.5).

#### ☐ **Report Macrograph Contents**

The VXT DECterm window does not respond to a request by an application to report macrograph contents. Clicking on this option enables ReGIS commands to report macrograph contents. When reporting is complete, disable this feature to reduce any security risks.

## Customizing VXT DECterm Windows

### 8.8 Changing Your Graphics Display Settings

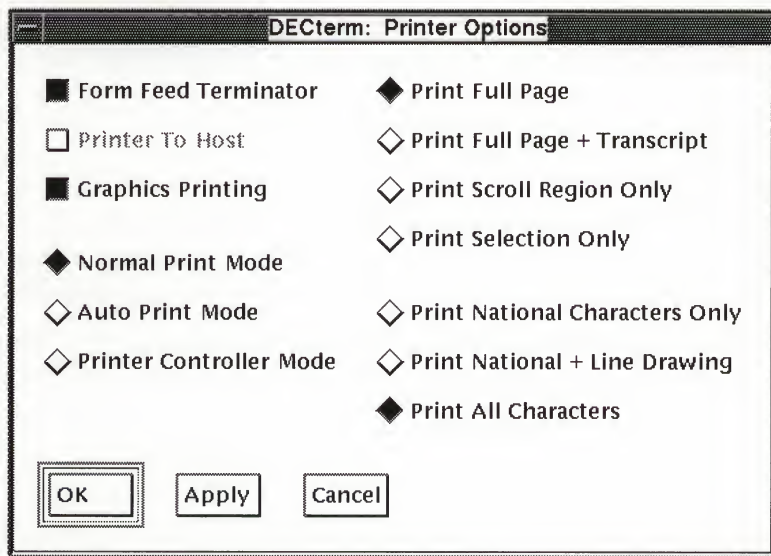
#### ☐ Number of Bit Planes

The number of bit planes supported by your system determines the number of colors available for ReGIS and sixel graphics. With 2-bit planes, DECterm can display four different colors at the same time. With 4-bit planes, DECterm can display 16 colors.

DECterm uses 2-bit planes on 4-plane systems and 4-bit planes on all other systems. This reduces the probability that DECterm must create a private color map. You can choose the number of colors available in ReGIS and sixel graphics by entering the number of planes supported by your system.

## 8.9 Changing Your Printer Settings

You can control print settings used with VXT DECterm windows, such as what area of the window to print. To view or change printer settings, choose Printer... from the Options menu. The terminal displays the Printer Options dialog box:



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From the Printer Options dialog box, you can change the following settings:

#### ☐ Form Feed Terminator

Normally, the terminal does not send a form feed (FF) character to the printer port at the end of any printing operation started from the VXT DECterm window's Print menu. Click this option on to append a form feed at the end of each page of output.



## Customizing VXT DECterm Windows

### 8.9 Changing Your Printer Settings

#### ☐ **Printer to Host**

If you use a serial printer or other device connected to the terminal's serial port, the terminal can accept input data from the device and send the data to the host application. By default, the serial port does not work as a printer port, so the Printer to Host button is dimmed. To use the serial port as a printer port, change the Port Usage setting (Section 7.2.1). After that, you can use the Printer to Host button.

#### ☐ **Graphics Printing**

Normally the terminal supports graphics printing operations in addition to text printing.

#### **Printing Modes**

You can choose from three printing modes:

- Normal Print Mode
- Auto Print Mode
- Printer Controller Mode

#### ☐ **Normal Print Mode**

Normally, you can send all or part of the text displayed in a window to a local printer. To print the window's text, press the **F2** (Print) key.

#### ☐ **Auto Print Mode**

Auto print mode lets you print each line of text on the local printer as it is received from the host system. The terminal sends the current display line to the printer when the cursor moves to the next line after a line feed, form feed, vertical tab, or autowrap.

To turn auto print mode on or off, press **Alt A**. You return to normal print mode when you leave auto print mode.

You can perform normal printing functions in auto print mode.

#### ☐ **Print Controller Mode**

Printer controller mode lets a host system send text directly to the local printer, without displaying the text in the VXT DECterm window. You cannot select this mode from the keyboard. Applications select this mode by using VT320 programming functions.

The **F2** (Print) key does not work in printer controller mode.

#### **Printing All or Part of the Window**

You can print all or part of the VXT DECTerm window. You can also choose to print selected characters. Based on your printer's capabilities, you can choose from the following options.

☐ **Print Full Page**

Normally when you print a VXT DECTerm window, the terminal sends the text in the main display to the printer.

☐ **Print Full Page + Transcript**

This option prints the text in the transcript (the lines saved off the top of the scrolling region), followed by the text in the main display. You can specify the number of lines saved by using the Display Options dialog box.

☐ **Print Scroll Region Only**

This option prints the text in the scrolling region of the main display.

☐ **Print Selection Only**

This option prints text that you have selected in the main display.

#### **Matching Your Printer's Capabilities**

You can print from character sets that match the capability of your printer.

☐ **Print National Characters Only**

This option prints national replacement characters (NRC) only. Other characters are converted to the corresponding national characters, if any; otherwise they are not sent.

☐ **Print National + Line Drawing**

This option prints national replacement characters and line-drawing characters.

☐ **Print All Characters**

This option prints all characters, including multinational and technical characters.



# 9

## Using VXT 3270 Windows

This chapter describes how to create and use VXT 3270 windows. The chapter covers the following major topics:

- VXT 3270 Windows
- Before You Start
- Creating a VXT 3270 Session
- Entering 3270 TE Connection Parameters
- Using the VXT 3270 Window
- Customizing the VXT 3270 Window
- Using VXT 3270 Keyboard Functions
- Translation Table

### 9.1 VXT 3270 Windows

VXT 3270 windows emulate IBM graphic display terminals. The windows let you access application programs on an IBM Systems Network Architecture (SNA) host system through the DECnet/SNA Gateway. You can have several VXT 3270 windows displayed at the same time, running different applications. You can use your mouse to move between windows.

All VXT 3270 terminal emulation tasks are performed by the VXT 2000 windowing terminal, significantly decreasing the load on the host system and on the network.

VXT 3270 windows provide functions similar to the following IBM terminal models:

IBM 3178  
IBM 3179-G and 3192-G



IBM 3180 models 1-5  
IBM 3270  
IBM 3270-S3G  
IBM 3278 models 1-5  
IBM 3279-S3G

Common features supported by the VXT 3270 include

- Active and passive connects
- Protected and unprotected fields
- Alphanumeric and numeric data
- Audible alarm
- Intensified display, normal display, and nondisplay characters
- Alphanumeric cursor (block cursor)


## 9.2 Before You Start

Before you create a VXT 3270 window, you need the following:

- ☐ A VXT 3270 software license
- ☐ A DECnet address for your terminal, displayed in the Terminal Manager window (Section 7.2.7)
- ☐ A DECnet name server address entered in the DECnet Name Translator dialog box (Section 7.2.8)
- ☐ A gateway name to enter in the Connection Parameters dialog box
- ☐ An access name to enter in the Connection Parameters dialog box

## 9.3 Creating a VXT 3270 Session

To create a VXT 3270 session:

1. Display the Create dialog box (Section 3.2.1).
  - a. In the Application box, click on the 3270 button.
  - b. In the Transport box, click on the DECnet button.
  - c. In the Host Name or Address box, enter the name or address of the DECnet host to use for the connection.
  - d. Click on the  button to save your settings in the Preferred Services list.

## Using VXT 3270 Windows

### 9.3 Creating a VXT 3270 Session

- e. Click on Start to start the session.
2. Enter connection information in the 3270 TE Enter Connection Parameters dialog box (Section 9.4).

### 9.4 Entering 3270 TE Connection Parameters

When you create a VXT 3270 session from the Create dialog box, the terminal displays a Connection Parameters dialog box for establishing a connection with an IBM host:

3270 TE: Enter Connection Parameters

Gateway	ALARUM
Access Name	CICSVSE1
PU Name	
Session Address	
Application Name	
Logon Mode	
Data	
Authorization Password	
Terminal Type	3192G
<input type="checkbox"/> Wait	
<input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Save"/> <input type="button" value="Clear"/>	

TI-03014-RAGS

To connect to an IBM host, you need to specify a Gateway name and one of the following:

- An Access Name
- A PU Name and the Wait button
- A PU name and an Application Name

## Using VXT 3270 Windows

### 9.4 Entering 3270 TE Connection Parameters

For example:

1. Click on the Gateway box and enter your gateway name.
2. Click on the Access Name box and enter your access name.
3. Click on the Save button to save your connection parameters for future sessions.
4. Click on the OK button to establish connection with your host.
5. A login box appears. Log in to your host system.

From the Connection Parameters dialog box, you can enter the following settings:

☐ **Gateway**

Identifies the name of the DECnet node that is defined as the host node for the gateway.

*Example:* MARKET

☐ **Access Name**

Identifies the name of the entry in the gateway access name table to use when connecting to the SNA network. Access names are set up on the host DECnet node for the gateway. The name can be 1 to 16 characters from the set of A to Z, 0 to 9, period (.), dollar sign (\$), at sign (@), and pound sign (#).

*Example:* PAYROLL

An access name can provide values for the following parameters:

Application name  
Data  
Logon Mode  
PU  
Session Address

If you specify these parameters with the Access Name parameter, they override any existing values in the access name table you specified.

☐ **PU Name**

Identifies the name of a particular physical link from the gateway to the IBM host. Ask the gateway manager for the appropriate PU value.

*Example:* SNA-1



#### ☐ Session Address

Identifies the IBM session address used to communicate with the IBM host. The gateway manager receives this value from the IBM systems programmer. The value is defined by the LOCADDR operand on the ACF/NCP LU macro or the VTAM LU macro.

The address is a decimal number from 0 to 255. You can specify 0 to let the gateway select the next available session address.

*Example:* 42

#### ☐ Application Name

Identifies the IBM application that will be the primary logical unit (PLU). The gateway manager receives this value from the IBM VTAM programmer. The value is defined in the VTAM APPL statement. The application name can be 1 to 8 characters from the set of A to Z, 0 to 9, period (.), dollar sign (\$), at sign (@), and pound sign (#).

*Example:* CICS

#### ☐ Logon Mode

Identifies the name of an entry in the logon mode table defined by the host IBM system. This entry specifies a selected set of SNA protocol parameters. The gateway manager receives this value from the IBM VTAM programmer. The value is defined in the VTAM MODEENT macro. The Logon Mode entry can be 1 to 8 characters from the set of A to Z, 0 to 9, period (.), dollar sign (\$), at sign (@), and pound sign (#).

*Example:* T3279M3

#### ☐ Data

Identifies user data to send to the IBM system as part of the logon request. The data can be a string of up to 110 ASCII characters.

Some IBM subsystems use values for the Data parameter at VXT 3270 window startup time to speed the logon process.

*Example:* JOE

#### ☐ Authorization Password

Allows access to secured logical units (LUs). Ask your gateway manager for the value of an authorization password if you need to specify this parameter. It is relevant only if your version of the DECnet/SNA Gateway or VMS/SNA Gateway supports LU security. The value can be 1 to 32 characters from the set of A to Z, 0 to 9, period (.), dollar sign (\$), at sign (@), and pound sign (#).

*Example:* 645312

☐ **Terminal Type**

Identifies the IBM display station to emulate. The value can be 3192G (default), 3279S3G, or 3270.

If you specify 3270, the VXT 3270 window emulates a generic 3270 display station. Graphics will not be displayed, and a smaller font and window size may be used. Use 3270 to emulate an IBM Model 4 (43×80 window) terminal or an IBM Model 5 (27×132 window) terminal.

*Example:* 3192G

☐ **[No]Wait**

Causes the VXT 3270 window to wait for an IBM application (PLU) to initiate a session. Nowait is the default. The Unformatted Systems Services (USS) window may appear when the session is established, depending on the version of the gateway or VMS/SNA gateway you are using.

Wait does not have a value as the other parameters do. If you use the Wait parameter, you cannot specify values for the following parameters:

Application Name  
Data  
Logon Mode

## 9.5 Using the VXT 3270 Window

After you establish a session with the IBM host, the terminal displays a VXT 3270 TE dialog box. The dialog box provides the work area for your session. This section describes how to use the work area to perform different tasks. The section covers the following major topics:

- Using the VXT 3270 Window Work Area
- Entering Data
- Editing Data
- Printing Text
- Copying and Pasting Text
- Recording and Playing Back Key Sequences
- Using the Numeric Keypad to Enter Numbers
- Saving Current Settings
- Viewing Your Connection Parameters

## Using VXT 3270 Windows

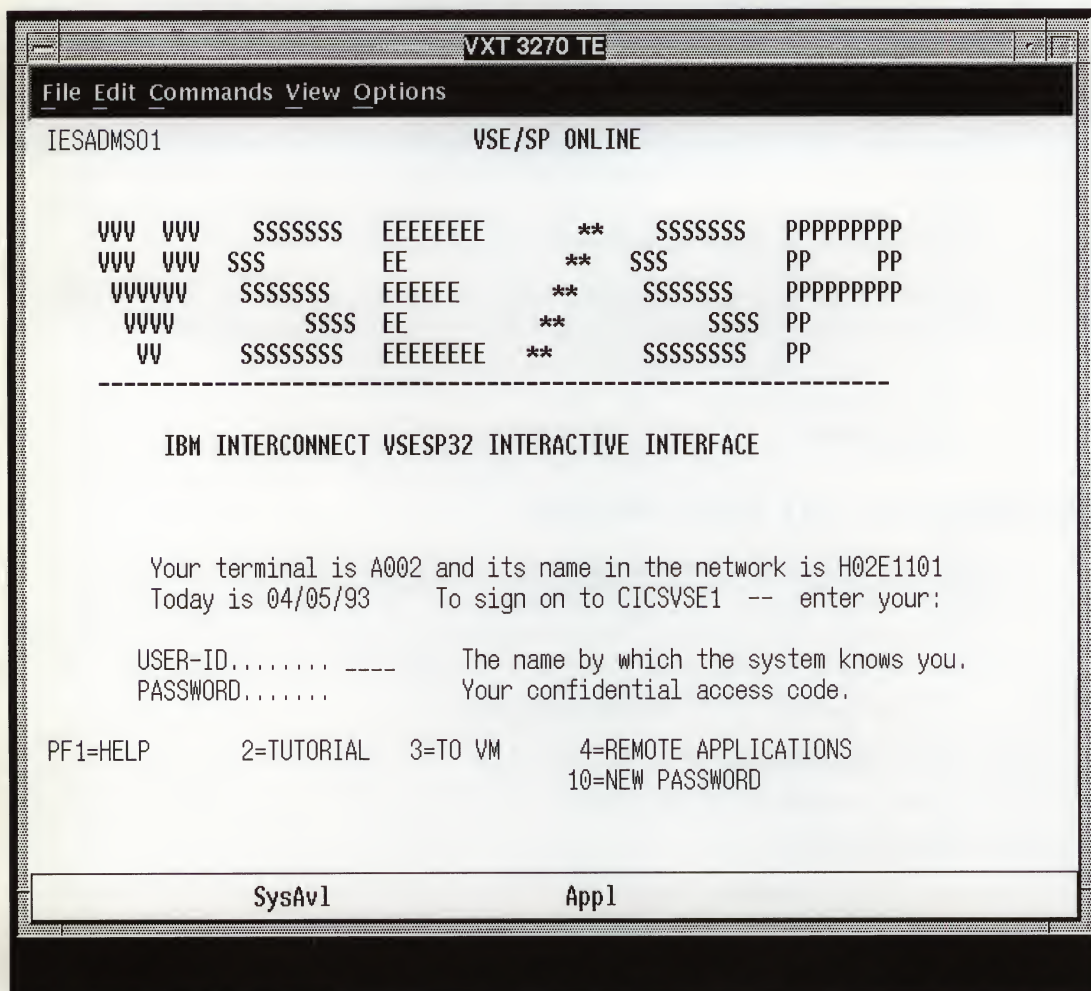
### 9.5 Using the VXT 3270 Window

- Using the MB3 Pop-Up Menu

Chapter 2 describes the basic features of windows and how to use menus.

#### 9.5.1 Using the VXT 3270 Window Work Area

The VXT 3270 work area has two sections — the display area and the operator information area.



TI-03015-RAGS



## 9.5.2 Working in the Display Area

The display area is where you perform most application-related duties, such as entering data and receiving output. The following sections explain some of the characteristics of the display area.

### The window

The VXT 3270 window lets you display different window sizes, which are controlled by the IBM host.

The VXT 3270 window can be unformatted or formatted. An unformatted window has no fields. How you enter data in an unformatted window depends on the application program you are using. Your IBM application program user's guide gives you instructions for using an unformatted window.

A formatted window contains two types of fields:

- **Protected fields** prompt you for required data. You cannot alter or add to the text in a protected field. If you try to enter data in a protected field, the keyboard locks, the terminal bell rings, and the word **Inhib** appears on the status line. To free the keyboard, press **Reset**.
- **Unprotected fields** are the spaces where you can enter data. When displaying a formatted window, the program normally places the cursor under the first empty position in an unprotected field. You can enter data until the field is full or use the **Tab** function to move to the start of the next unprotected field.

### The Cursor

The cursor in the display area can take three forms:

- The default **text cursor** is a blinking block. You can use the **CrBlnk** (Cursor Blinking) parameter to select a nonblinking cursor. See Section 9.7 to use VXT 3270 parameters.
- The **selector mouse cursor** is a small hand with a pointing finger that appears when you use the Selector Mouse function (Section 9.6.4).
- A small **cross cursor** appears for certain graphics applications.

## Using VXT 3270 Windows

### 9.5 Using the VXT 3270 Window

#### 9.5.3 Understanding Operator Information

The operator information area displays status indicators that let you monitor the current status of your session. Table 9-1 lists possible status indicators.

**Table 9-1 Status Indicators**

Status Indicator	Meaning
Appl	You are in a session with an application program (an LU-LU session).
Ext	You are using the Ext function.
Insert	You are in Insert mode.
Inhib	The software suspended input from your keyboard. This occurs when <ul style="list-style-type: none"><li>— You try to enter data in a protected field</li><li>— You enter the wrong type of data in a field</li><li>— The VXT 3270 window is communicating with the IBM software after you press a key such as Enter</li></ul>
O	You are using the numeric lock override function. This indicator is turned off when you press the NumOvr function again.
P	You are in play mode. A key sequence is being recalled by the Play function.
Print	The contents of your window are being copied to the printer you specified at startup. The indicator remains displayed until the process is complete. The window is refreshed when the process is complete.
R	You are in record mode. A key sequence is being recorded.
SSCP	You are in a session with the IBM control program (an SSCP-LU session).
SysAvl	You are successfully communicating with the IBM system and can initiate transmission. SysAvl turns off while the VXT 3270 window transmits data to the IBM host.
Wait	The IBM system is not available for input.

#### 9.5.4 Entering Data

##### Unformatted windows

If your IBM application displays an unformatted window, use the FM key to separate entries. Your application guide explains how and when to use this key.

Improper use of some keys causes the keyboard to lock in order to prevent input to protected fields. If the keyboard locks, the Inhib status indicator appears and you cannot use any keys to enter data. Use the Reset function to unlock the keyboard and continue entering data.

### **Formatted windows**

When the IBM application displays a formatted window, enter and edit data in the unprotected fields only. After you fill an unprotected field with data, the application may move the cursor to the start of the next protected or unprotected field. You can also move the cursor by using the arrow keys or the Tab, BckTab, Home, and Newlin functions (Section 9.7).

## **9.5.5 Editing Data**

You can edit data in unprotected fields by typing new data over the old data (Normal mode) or inserting new data into partially filled fields (Insert mode). You can also use the Delete, ErEof, ErInp, and RubOut functions to change the contents of unprotected fields (Section 9.7).

### **Using Normal Mode**

Normal mode lets you enter new data or edit existing data. When you enter data, the character you type either fills in an empty position or replaces a character previously displayed in that position. The cursor then moves to the next position. Remember that a space or a blank is a character.

### **Using Insert Mode**

Insert mode lets you enter new characters between existing characters in an unprotected field.

Use the Insert function to activate Insert mode. Place the cursor under the character where you want to insert text. When you insert text, characters starting from the cursor position move right.

You can insert characters in an unprotected field until it is full. If you try to insert text after the field is full, the keyboard locks, and Inhib is displayed on the Status line. Use the Reset function to exit Insert mode and return to Normal mode. Insert mode is also ended by any Enter, Clear, PA, or PF function.

---

### **Note**

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Some fields that appear to have room for more data may contain one or more trailing blank characters that cause the field to fill.

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## Using VXT 3270 Windows

### 9.5 Using the VXT 3270 Window

#### 9.5.6 Printing Text

The VXT 3270 Print... function lets you print text from the VXT 3270 window to a printer connected to the terminal's printer port.

##### **To Print from the File Menu**

To print the contents of an application window, pull down the File Menu and choose Print. The VXT 3270 window send the text from the active window to the terminal's printer.

#### 9.5.7 Copying and Pasting Text

You can copy and paste text in a VXT 3270 window. You can also copy text from one window and paste the text into another window. To copy and paste text, you use the VXT 3270 window's Edit menu.

From the Edit menu, you can perform the following functions:

##### **Copy**

Choosing this item places the currently selected text into the terminal's copy buffer. You can also use the Select All menu item to select the complete window.

##### **Paste**

Choosing this item sends the contents of the terminal's copy buffer to the cursor location in the window as if it were typed on the keyboard.

##### **Select All**

Choosing this item places all of the window's text into the terminal's copy buffer. You can also use the Copy menu item to place selected text from the window into the copy buffer.

#### 9.5.8 Selecting Text to Copy

You can select text a word, a line, or a block at a time. A block can be a single character or any number of contiguous characters, up to the complete window. You can also use the Select All menu item in the Edit menu to select the complete window.

##### **To select a block of text:**

1. Point to the start of the block.
2. Press and hold MB1, then drag the pointer to the end of the block.
3. Release MB1 to indicate the end of the block. The selected text is highlighted.
4. In the Edit menu, click on the Copy menu item.

**To select a single word:**

1. Point to the word.
2. Double click MB1 to select the word. The selected word is highlighted.
3. In the Edit menu, click on the Copy menu item.

**To select a line of text:**

1. Point to the line.
2. Triple click MB1 to select the line. The selected line is highlighted.
3. In the Edit menu, click on the Copy menu item.

### 9.5.9 Pasting Text

After you select text and store it in the copy buffer, you can paste the text to the text cursor location in the same window or in a different window.

**To paste text:**

1. Place the text cursor where you want to copy the text.
2. Choose the Paste menu item from the Edit menu of the window that will receive the copied text. The terminal copies the text to the cursor position.

### 9.5.10 Using Quick Copy

The quick copy feature lets you paste text without storing it in the copy buffer or using the Edit menu. There are two ways to perform a quick copy:

**Method 1**

1. Select the text as described in Section 9.5.8.
2. Place the text cursor where you want to paste the text.
3. Press and release MB2. If you accidentally move the mouse before releasing MB2, method 2 is activated.

You can use this method to copy text from one window to another. Move the input focus to the other window before clicking MB2. To paste into remote DECterm windows, use MB3.

**Method 2**

1. Place the text cursor where you want to paste the text.
2. Point to the start of the text you want to copy.
3. Press and hold MB2. Drag the pointer to the end of the text to be copied. Release MB2 to copy the selected text to the cursor position.

### 9.5.11 Extending Your Selected Text

After you select an area of text to copy, you may decide that you wanted to copy a larger area. Before you paste text, you can use the mouse or the arrow keys to extend the area you have selected.

#### To extend your selection with the mouse:

1. After selecting text with MB1, move the mouse cursor to the position that marks the boundary of the area you would like to have selected.
2. Press the **[Shift]** key and click MB1. This extends the initially selected area up to the present position of your mouse cursor.

#### To extend your selection with the arrow keys:

After selecting text with MB1, press the **[Shift]** key and any arrow key to extend your selected text in the direction of the arrow.

### 9.5.12 Copying and Pasting With the Keyboard Only

If your mouse is not operating, you can use the keyboard to copy and paste text. Table 9-2 lists the keys to use.

**Table 9-2 Keyboard Copy and Paste Keys**

Press...	To...
<b>Select</b>	Define the starting point for selected text.
<b>[Shift]</b> <b>Select</b>	Select the range between the starting point and the current cursor position. This sequence also deselects any previous selection.
<b>[Shift]</b> <b>[F8]</b>	Toggle between add mode and normal mode. The default mode is normal.
<b>[Shift]</b> <b>[↑]</b> , <b>[↓]</b> , <b>[→]</b> , <b>[←]</b>	Extend the current selection.
<b>[Ctrl]</b> <b>/</b>	Select all.
<b>[Ctrl]</b> <b>\</b>	Deselect all.
<b>[F14]</b>	Paste.
<b>[Ctrl]</b> <b>[Insert Here]</b>	Do a clipboard copy.
<b>[Shift]</b> <b>[Insert Here]</b>	Do a clipboard paste.



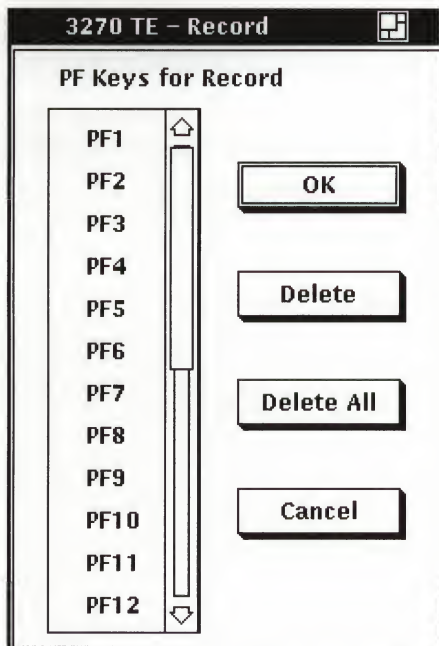
### 9.5.13 Recording and Playing Back Key Sequences

You can save frequently used text and commands, then recall them when needed. The VXT 3270 lets you record up to 127 keystrokes on a PF key, then play them back using the Playback... function.

#### Recording Key Sequences

To record a key sequence:

1. Pull down the Commands menu and choose Record... The Record dialog box appears.



TI-03016-RAGS

2. Click on the PF key that you want to store your key sequence.
3. Click on OK. The window displays an R in the operator information area, and a message box pops up requesting the key sequence.
4. Click on OK to dismiss the message box.
5. Enter the key sequence you want to save.
6. To record your keystrokes, pull down the Commands menu and choose Record... again. Click on the OK button.

## Using VXT 3270 Windows

### 9.5 Using the VXT 3270 Window

#### Canceling a Key Sequence While Recording

You can cancel a key recording in progress at any time up until you choose Record Key a second time. To cancel a recording in progress:

1. Pull down the Commands menu and choose Cancel Recording. The Cancel Recording dialog box appears.
2. Click on Yes to cancel the Record function.

#### Viewing Recorded Key Sequences

To view currently recorded keystrokes:

1. Pull down the View menu and choose Recorded Key Sequences. The Recorded Key Sequences dialog box appears.
2. Click on the PF key that contains the keystrokes you want to see. The key sequence appears. Items enclosed in angle brackets are function keys.
3. Click on the Dismiss button to close the dialog box.

#### Playing Back Recorded Key Sequences

Before playing back a recorded key sequence, be sure your cursor is at the right place on the application window. If your cursor was in a specific field when you recorded a sequence of text and commands, you must be in the same field for the playback sequence to work properly. To play back a recorded key sequence:

1. Pull down the Commands menu and choose Playback... to see which PF keys have key sequences. The VXT 3270 displays the Playback dialog box.
2. Click on the PF key that stores the keystrokes you want to play back. Then click on OK. The letter P appears in the operator information area while the VXT 3270 plays back the key sequence you have chosen.

#### 9.5.14 Using the Numeric Keypad to Enter Numbers

When you use a VXT 3270 window, the numeric keypad keys have default functions assigned. If you want to use the keypad to enter numbers, pull down the Options menu and select Numeric Keypad. This menu selection is a toggle that lets you switch back and forth between entering numbers and functions.

The toggle indicator next to the Numeric Keypad selection is darkened when the keypad's numeric values are in effect.

### 9.5.15 Saving Current Settings

To save your current settings, choose Save Current Settings from the Options pull-down menu.

When you save the current settings, the terminal saves the settings in your terminal's resource file for future sessions.

### 9.5.16 Viewing Settings

The following sections describe how to view

- Keyboard layout maps
- Function list
- Connection parameters
- Field attributes

### 9.5.17 Viewing Keyboard Layout Maps

#### Supported Keyboards

The VXT 3270 supports key function definitions and keyboard layout maps for the LK401 keyboard. By default, the VXT 3270 functions map to the LK401-style keyboard, and the LK401 layout is the default keyboard map. This section explains how to enable key function definitions and access keyboard layout maps.

#### Interpreting Keyboard Layout Maps

The left half of the layout map lists function keys and their functions.

- A shaded key means you press the Ext key then the character key. The Ext key is the period key on the numeric keypad.
- The caret (^) symbol in front of a key means you must press the **Ctrl** key along with that key to access the associated function.

The top and right area of the layout map shows the functions assigned to keypad keys. For shaded functions, press the Ext key first.

#### Viewing Your Keyboard Layout Map

To view the keyboard layout map for your LK401 keyboard, pull down the View menu and choose Key Definitions.



### **9.5.18 Viewing the Function List**

Many of the VXT 3270's keys have default function definitions. Section 9.7 provides detailed explanations of VXT 3270 functions and their default mappings. You can redefine these functions so that they more closely match your particular needs. To see how VXT 3270 functions are mapped, you can check the VXT 3270 Function List.

To view the Function List, pull down the View menu and choose the Function List menu item. The 3270 TE Function List dialog box appears. The Function List dialog box displays how functions map to the keys on your keyboard.

If you change any key definitions during a session, those changes are automatically reflected in the function list when you click on the Update button.

The Dismiss button closes the dialog box.

### **9.5.19 Viewing Your Connection Parameters**

You can check current connection parameters at any time by pulling down the View menu and choosing Connection Parameters. The Connection Parameters dialog box appears, showing the parameters as they are currently set. Click on Dismiss when you finish viewing the parameters.

### **9.5.20 Viewing Field Attributes**

Field attributes are characters that appear at the start of a field to indicate how the field displays on the window: at normal intensity, at high intensity, or invisibly. You can display field attributes three ways:

- Choose the Field Attributes menu item from the View menu.
- Choose the View Attributes menu item from the MB3 pop-up menu.
- Define a key to enable or disable the DspAtt function.

Table 9-3 describes the attribute characters.

**Table 9–3 Field Attributes**

Field Attribute	Meaning
n	Unprotected field with normal intensity
N	Protected field with normal intensity
d	Unprotected field, detectable with a light pen
D	Protected field, detectable with a light pen
h	Unprotected field with high intensity
H	Protected field with high intensity
i	Unprotected nondisplay field
I	Protected nondisplay field

To remove the field attributes from your window, display the MB3 pop-up menu again. The View Attributes selection has a toggle indicator next to it, showing that field attributes are turned on. Choose View Attributes again to turn them off.

### 9.5.21 Using the MB3 Pop-Up Menu

The MB3 pop-up menu provides you with quick access to certain functions also found on pull-down menus. Table 9–4 lists the MB3 pop-up menu items and their corresponding location on the main menus:

**Table 9–4 Quick Access to Functions: MB3 Pop-Up Menu**

MB3 Pop-Up Menu	Main Menu
<u>K</u> ey Definitions	<u>V</u> iew menu
View <u>A</u> tttributes	<u>V</u> iew menu
<u>N</u> umeric Keypad	<u>O</u> ptions menu
<u>P</u> rint	<u>F</u> ile menu
<u>R</u> ecord...	<u>C</u> ommands menu
Play <u>b</u> ack...	<u>C</u> ommands menu
<u>C</u> ancel Recording	<u>C</u> ommands menu

## Using VXT 3270 Windows

### 9.5 Using the VXT 3270 Window

#### 9.5.22 Exiting from a VXT 3270 Window

To exit the VXT 3270 window, pull down the File menu and choose Exit. You can also press **Ctrl** **Z** to exit your session.

### 9.6 Customizing the VXT 3270 Window

The VXT 3270 window lets you define keys and customize certain display features such as the font size and window title. You can also set the mouse to perform certain light pen functions. This section describes the following topics:

- Customizing Key Definitions
- Saving and Loading Custom Key Definitions
- Modifying VXT 3270 Window Options
- Using the Selector Mouse Function

#### 9.6.1 Customizing Key Definitions

When you use a VXT 3270 window, certain keys perform specific IBM 3270 functions. You can customize key definitions to suit your needs. This section describes how to assign and delete custom key definitions.

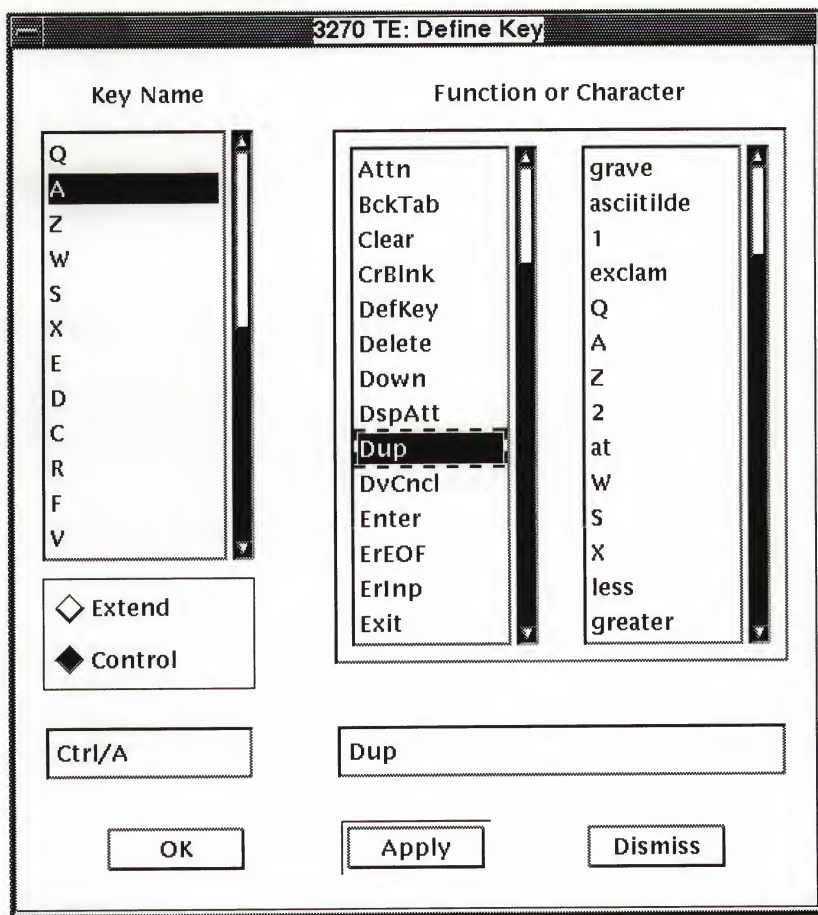
##### **Assigning Custom Key Definitions**

To assign your own key definitions, pull down the Options menu and choose the Define Key... menu item. The Define Key dialog box appears.



## Using VXT 3270 Windows

### 9.6 Customizing the VXT 3270 Window



TI-03017-RAGS

This figure shows an example of the Dup function being assigned to the **Ctrl** **Y** key sequence.

#### To Assign a Key Definitions

1. In the Key Name list box, click on the key you want to define. To define **Ctrl** **key** or extend+**key** sequences, click on the Extend or Control option button first.
2. The Function or Character box contains a list of functions (left) and characters (right). Click on the name of the function or character that you want to assign to the key you just selected. Click on Apply to assign the function or character to the key.

## Using VXT 3270 Windows

### 9.6 Customizing the VXT 3270 Window

3. Repeat this procedure to create as many custom key definitions as you want.
4. Click on OK to dismiss the dialog box.

Your new key definitions remain in effect for the current session. To create a permanent file of your key definitions, choose the Save Key Definitions... menu item from the File menu.

#### Deleting Custom Key Definitions

To delete custom key definitions:

1. Pull down the Options menu and choose Delete Key... to display the Delete Key dialog box.
2. Click on the key whose function you want to delete. Click on the Extend or Control button if you are deleting a `Ctrl [key]` or `extend+[key]` function.
3. Click on Apply to delete the key definition.
4. Repeat this procedure for each key function you want to delete.
5. Click on OK to dismiss the dialog box.

### 9.6.2 Saving and Loading Custom Key Definitions

You can save your customized key definitions for future sessions. The terminal loads your saved key definitions when you start a new VXT 3270 window or choose the Last Saved Key Definitions menu item from the File menu. You can also return to the default key definitions at any time.

#### Saving Key Definitions

To save your customized key definitions:

From the VXT 3270 window, pull down the File menu and choose the Save Key Definitions menu item. Your customized key definitions are saved in the terminal's resource file.

#### Loading Customized or Default Key Definitions

You can recall the last set of key definitions you saved whenever you need them. You can also recall the system-default key definitions when needed. For example, you may want to use the default key definitions for some tasks, then switch to your customized definitions for other tasks.

To load customized or default key definitions:

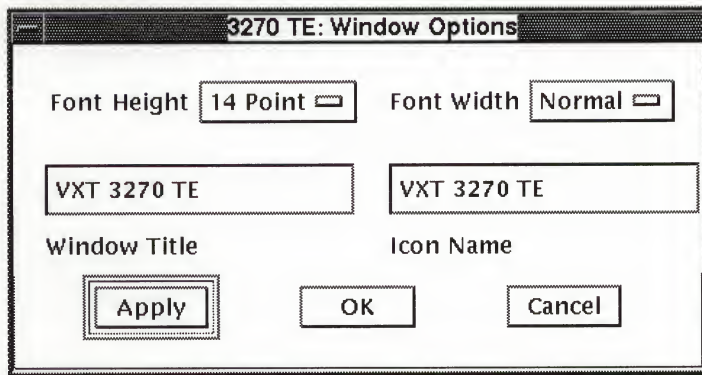
1. In the VXT 3270 dialog box, pull down the File menu and choose Load Key Definitions.

2. To use customized keys, choose Last Saved Key Definitions.  
To use system-default keys, choose Default Key Definitions.  
If the definitions cannot be loaded, the session continues with the previous definitions still in use.

### 9.6.3 Modifying VXT 3270 Window Options

The Window Options dialog box lets you change the font size used in application windows. You can also change the window title and icon name of the VXT 3270 dialog box.

To view the Window Options dialog box, pull down the Options menu and choose the Window... menu item. The Window Options dialog box looks like this:



TI-03018-RAGS

If you are running in 3270 emulation mode, you can change any of the settings listed in the dialog box. You cannot change the font height in 3279S3G or 3192G emulation mode.

#### **To change the font height or width:**

Click on the button in the Font Height or Font Width box to display a pop-up menu of choices.

#### **To change the Window Title or Icon Name:**

Click on the Window Title or Icon Name box and enter your text.

To apply your changes, click on Apply.

To apply your choices and dismiss the dialog box, click on OK.



## Using VXT 3270 Windows

### 9.6 Customizing the VXT 3270 Window

#### 9.6.4 Using the Selector Mouse Function

The Selector Mouse function lets you use your mouse to perform selection and attention operations provided by a selector light pen. When you use Selector Mouse, the mouse pointer appears as a small hand with a pointing finger.

To use the Selector Mouse function, pull down the Options menu and choose Selector Mouse. This menu selection is a toggle switch that lets you go back and forth between Selector Mouse and normal mouse operation. A toggle indicator appears next to the Selector Mouse selection when it is in use.

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#### Note

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You cannot access the MB3 pop-up menu within the display area while you are using the Selector Mouse function. To access the MB3 pop-up menu, move the mouse pointer to the operator information area.

---

### 9.7 Using VXT 3270 Keyboard Functions

This section describes available VXT 3270 keyboard functions and the default keys that perform these functions. To customize key functions, see Section 9.6.

The VXT Terminal Manager's Customize Keyboard dialog box contains a Keyboard Type scroll box. The Keyboard Type setting has no effect on the key definitions used in the VXT 3270 window.

Table 9-5 lists default key functions on the standard LK401 ANSI keyboard.

**Table 9-5 VXT 3270 Window — Default Key Functions**

Function	Default Key or Key Combination
Attn	<span>F19</span> or Ext+ <span>A</span>
BckTab	<span>F12</span> or <span>Ctrl</span> <span>H</span>
Clear	Ext+ <span>F20</span> or Ext+ <span>Enter</span>
CrBlnk	<span>F17</span>
Defkey	<span>Ctrl</span> <span>K</span>
Delete	<span>Next Screen</span>

---

Ext = the period key on the numeric keypad.  
KP = keypad.

(continued on next page)

**Table 9–5 (Cont.) VXT 3270 Window — Default Key Functions**

Function	Default Key or Key Combination
DspAtt	Ext+ <b>F17</b> or <b>Ctrl V</b>
DUP	Ext+ <b>F12</b> or Ext+ <b>*</b>
DvCncl	Ext+ <b>Remove</b>
Enter	<b>Do</b> or <b>Enter</b>
ErEof	<b>F18</b>
ErInp	Ext+ <b>F18</b> or Ext+ <b>KP-</b>
Exit	<b>F10</b> or <b>Ctrl Z</b>
Ext	<b>KP.</b>
FM	Ext+ <b>F13</b> or Ext+ <b>;</b>
Help	<b>Help</b> or Ext+ <b>H</b>
Home	<b>F13</b> or Ext+ <b>B</b>
Horizontal Control	<b>←</b> and <b>→</b>
Insert	Ext+ <b>PF4</b>
Logical NOT	Ext+ <b>N</b>
Logical OR	Ext+ <b>O</b>
Newlin	<b>Return</b> or <b>Ctrl M</b>
NumOvr	<b>Remove</b> or Ext+ <b>J</b>
PA1	<b>PF4</b>
PA2	<b>KP-</b>
PA3	<b>KP,</b>
PF1	<b>PF1</b>
PF2	<b>PF2</b>
PF3	<b>PF3</b>
PF4	<b>KP7</b>
PF5	<b>KP8</b>
PF6	<b>KP9</b>
PF7	<b>KP4</b>
PF8	<b>KP5</b>

Ext = the period key on the numeric keypad.  
KP = keypad.

(continued on next page)

## Using VXT 3270 Windows

### 9.7 Using VXT 3270 Keyboard Functions

**Table 9–5 (Cont.) VXT 3270 Window — Default Key Functions**

Function	Default Key or Key Combination
PF9	KP <b>6</b>
PF10	KP <b>1</b>
PF11	KP <b>2</b>
PF12	KP <b>3</b>
PF13	Ext+ <b>PF1</b>
PF14	Ext+ <b>PF2</b>
PF15	Ext+ <b>PF3</b>
PF16	Ext+KP <b>7</b>
PF17	Ext+KP <b>8</b>
PF18	Ext+KP <b>9</b>
PF19	Ext+KP <b>4</b>
PF20	Ext+KP <b>5</b>
PF21	Ext+KP <b>6</b>
PF22	Ext+KP <b>1</b>
PF23	Ext+KP <b>2</b>
PF24	Ext+KP <b>3</b>
Play	<b>Insert Here</b>
Print	<b>F11</b> or Ext+ <b>P</b>
Record	Ext+ <b>Insert Here</b>
Reset	KP <b>0</b>
RubOut	<b>&lt;X&gt;</b>
Save	Ext+ <b>V</b>
Select	Ext+ <b>Select</b>
SelTab	<b>Prev Screen</b>
SysReq	Ext+ <b>F19</b>
Tab	<b>Tab</b>
Vertical Control	<b>↓</b> and <b>↑</b>
Warp	Ext+ <b>w</b>

Ext = the period key on the numeric keypad.  
 KP = keypad.



### **If the Keyboard Is Locked**

Improper use of some keys causes the keyboard to lock. For example, if you try to enter data in a protected field, the keyboard may lock. If the keyboard locks, the status indicator Inhib appears, and you cannot use any keys to enter data. Use the Reset function to unlock the keyboard and resume using it.

If you need additional information about the VXT 3270 window key functions, refer to these IBM documents:

- *IBM 3270 Information Display System*
- *IBM 3270 Information Display System: Operator's Guide*
- *IBM 3270 Information Display System: 3278 Display Station Operator's Guide*
- *IBM 3179-G/3192-G Color Graphics Display Station Description*

## **9.7.1 Key Functions Defined**

### **Attn**

The Attn function requests the attention of the IBM application program that you are running. Attn sends an SNA SIGNAL command to the IBM application. See your application's user guide to determine the program's response.

### **BckTab**

The BckTab function moves the cursor backward.

In a formatted window, the cursor moves to the beginning of the unprotected field it is in or to the beginning of the preceding unprotected field. If the cursor is in the first position of the first unprotected field, the cursor moves to the first position of the last unprotected field in the window.

In an unformatted window, the cursor returns to the first position on the window.

### **Clear**

The Clear function clears the window contents and moves the cursor to the first position in the window. When you use Clear, the software notifies the application that this function is being used.

### **CrBlnk**

The CrBlnk function lets you turn cursor blinking on and off. By default, the cursor blinks.

## Using VXT 3270 Windows

### 9.7 Using VXT 3270 Keyboard Functions

#### **Defkey**

The Defkey function lets you define keys during an active session. When you use Defkey, the Define Key dialog box appears.

#### **Delete**

The Delete function deletes the character at the cursor position. The cursor remains where it is, and characters to the right of the cursor in the same field move one position to the left. The end of the field fills with null characters.

#### **DspAtt**

The DspAtt (display attributes) function turns visible attribute mode on and off. You use this mode of operation to display the field attribute characters at the beginning of fields (Table 9-3).

#### **DUP**

The DUP (duplicate) function lets you enter the same value in the same field on different forms without having to repeat the entry for each form. After entering the value in the first form, use DUP when you come to the same field on other forms. The application fills these fields with the same value. See your application's user guide for details on using the DUP function.

When you use the DUP function, the window displays an asterisk (\*).

#### **DvCncl**

The DvCncl (device cancel) function lets you cancel a Record function at any point.

#### **Enter**

The Enter function sends the data you type to the application running on the IBM host. While data is being sent, the keyboard locks and the window displays the Inhib status indicator Inhib. Usually, the application releases the keyboard after it finishes processing your data.

#### **ErEof**

The ErEof (erase to end of field) function erases the contents of the current field, from the cursor to the end of the field. The cursor remains in the same location.

#### **ErInp**

In formatted windows, the ErInp (erase input) function clears all data in unprotected fields and moves the cursor to the first position in the first unprotected field.

In unformatted windows, ErInp clear all data and moves the cursor to the first position in the window.

You can use Record + ErInp to remove all recorded key sequences.

### **Exit**

The Exit function exits the VXT 3270 window. Communications with the IBM host ends, including any data exchange in progress.

### **Ext**

The Ext (extended function) key lets you access the second function of another key. You press Ext, then press the other key. The Ext key is the period key on the numeric keypad.

When you press Ext, the window displays the Ext status indicator.

---

### **Note**

---

If you press Ext accidentally, you can press Reset to cancel its effect.

---

### **FM**

The FM (field mark) function marks the end of a field on an unformatted window or the end of part of an unprotected field on a formatted window. See your application's user guide for specific uses.

When you use FM, your window displays a semicolon (;).



### **Help**

The Help function displays your current keyboard layout. This function is identical to the Keyboard Layout selection on the View menu.


### **Home**

The Home function repositions the cursor to the first position in the first unprotected field on the window.

### **Left and Right Arrow Keys**

The  and  keys let you move the cursor to the left or right without changing data you have already entered.

If you use the  key when the cursor is at the end of a line, the cursor automatically moves down to the start of the next line.

If you use the  key when the cursor is at the beginning of a line, the cursor automatically moves up to the end of the previous line.



## Using VXT 3270 Windows

### 9.7 Using VXT 3270 Keyboard Functions

#### **Insert**

The Insert function enables Insert mode, which lets you edit data by entering new characters between existing characters in an unprotected field (Section 9.5.4). When you use Insert, the window displays the Insert status indicator.

Use Reset to return your window to Normal mode. Using any Clear, Enter, PA, or PF function also returns your window to Normal mode.

If the keyboard locks when you try to insert characters into a field that looks empty, there may be trailing spaces in that field. Use the ErEof function to erase these spaces.

#### **Logical NOT**

The use of the Logical NOT function is controlled by the IBM application.

#### **Logical OR**

The vertical bar (|) represents the IBM symbol for a Logical OR. The use of the Logical OR is controlled by the IBM application.

#### **Newlin**

The Newlin (new line) function moves the cursor to the first unprotected position on the next line of your window. If there are no unprotected fields on the window, the cursor moves to the first location in the window. If the window has no fields, the cursor moves to the beginning of the next line.

#### **NumOvr**

The NumOvr (numeric lock override) function is a toggle switch that lets you enter nonnumeric characters into numeric fields. When you use NumOvr, the window displays the O status indicator.

#### **PA1 to PA3**

The program access keys PA1 to PA3 are defined by the application you are using. These keys request attention from the IBM application without sending any data. See your application's user guide for the function of these keys.

#### **PF1 to PF24**

The program function keys PF1 to PF24 are defined by the application you are using. They request attention from the application and send the data entered to the host. The PF keys are coded by the application to perform related application functions. See your application's user guide for PF key assignments.

### **Play**

The Play function lets you recall text and commands that you stored in a PF key by using the Record function. To recall a sequence, press the Play key followed by the PF key that stores the sequence. The Play function executes any commands included in the sequence.

When you use the Play function, the window displays the P status indicator.

### **Print**

Use Print to send the contents of your window to the terminal's printer. For more information, see Section 9.5.6. When you use Print, the window displays the Print status indicator.

### **Record**

Use Record to store a keystroke sequence in a specific PF key. Press Record, choose a PF key, enter the keystroke sequence, then press Record again. You can save a up to 127 keystrokes on a PF key. When you use the Record function, the window displays the R status indicator R.

You cannot record the following functions as a part of your keystroke sequence:

- Defkey
- DvCncl
- Play
- Record
- Save
- SysReq

To recall the keystroke sequence, use the Play function.

To cancel a Record function in progress, use the DvCncl function.

To erase all previously recorded sequences, use Record + ErInp.

You can also record keystrokes by using the Record Keys selection from the MB3 pop-up menu (Section 9.5.13).

### **Reset**

Use Reset to return your keyboard to Normal mode after using Insert mode. Also,

You can also use Reset to unlock the keyboard if you tried to enter data into a protected or a full field, or you tried to enter the wrong type of data into a field.

Reset removes the Inhib status indicator. The cursor remains where it is and the window remains unchanged.

## Using VXT 3270 Windows

### 9.7 Using VXT 3270 Keyboard Functions

#### RubOut

The RubOut function erases the character to the left of the cursor and moves the cursor to that position.

#### Save

The Save function lets you save any key definitions you have redefined during a session.

#### Select

The Select function lets you choose items from a menu, table, or list, then notify the application of your selection. Use the vertical and horizontal control keys to place the cursor on the field designator character, then use Select. See the appropriate IBM manual for more information.

#### SelTab

The SelTab function repositions the cursor to the first character position of the next select-key detectable field (protected or unprotected) with a designator character. SelTab works the same as the IBM Selectable Field Tab key. See the appropriate IBM manual for more information.

#### SysReq



The SysReq (System Request) function lets you shift between the application program (LU-LU session) and the control program (SSCP-LU session). When you are in an LU-LU session, the window displays the Appl indicator. When you are in the SSCP-LU session, the window displays an SSCP indicator. The window in your LU-LU session is refreshed when you return to it by using SysReq.


#### Tab


The Tab function moves the cursor to the first character location of the next unprotected field on your window. If the window has no fields, Tab moves the cursor to the first location on the window.

If you press Tab when the cursor is within the last unprotected field in the window, the cursor moves to the first position of the first unprotected field on the window.

#### Up and Down Arrow Keys

The  and  keys let you move the cursor up or down on your window without altering data already entered.

If you use the  key when the cursor is at the top of the window, the cursor moves to the same column at the bottom of the window.

If you use the  key when the cursor is at the bottom of the window, the cursor moves to the same column at the top of the window.



## Warp

By default, the VXT 3270 supports warping. When using certain applications, the mouse pointer shifts (or warps) to a new position on the window. You can use the Warp function to turn warping on or off.


## 9.8 Translation Table

The VXT 3270's built-in translation table contains a modified version of the ISO-Latin character set, meant mainly for use in North America. The ISO-Latin to Extended Binary Coded Decimal Interchange Code (EBCDIC) table translates the ISO-Latin characters you generate to the EBCDIC characters that your IBM application uses. The EBCDIC to ISO-Latin table then translates the EBCDIC characters generated by the IBM application back into the appropriate ISO-Latin characters.

The following figure shows the left and right halves of the 8-bit code table for the modified ISO-Latin character set. To determine the hexadecimal code for the character you want, locate the character and then combine the number or letter in its row with the number or letter in its column. For example, the letter A is represented by the hexadecimal code 41.

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0																
1																
2		!	"	#	\$	%	&	'	(	)	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6	'	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{		}	~	

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8		f	=	-												
9																
A		i	ø	£	¥	!	§	"	©	®	«	¬	-	®	-	
B	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	¿
C	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
D	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
E	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
F	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ

TI-03019-RAGS



# 10

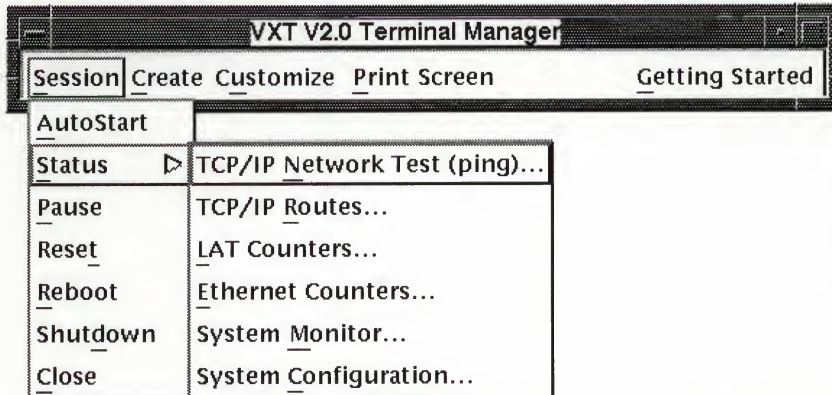
## Checking the Terminal's Status

This chapter describes how to monitor the operating status of your terminal and of network communication. To monitor the terminal's status, you use the Status submenu accessed from the Session menu in the Terminal Manager window. This chapter covers the following topics:

- Displaying the Status Submenu
- Checking a TCP/IP Host System
- TCP/IP Routes Dialog Box
- Displaying LAT and Ethernet Counters
- Monitoring the Terminal's Memory and Network Use
- Checking the Terminal's System Configuration

## 10.1 Displaying the Status Submenu

To display the Status submenu, choose the Status menu item from the Session menu in the Terminal Manager window.



LJ-01154C-RAGS

When you choose a menu item from the Status submenu, the terminal displays a dialog box for that topic.

## 10.2 Checking a TCP/IP Host System

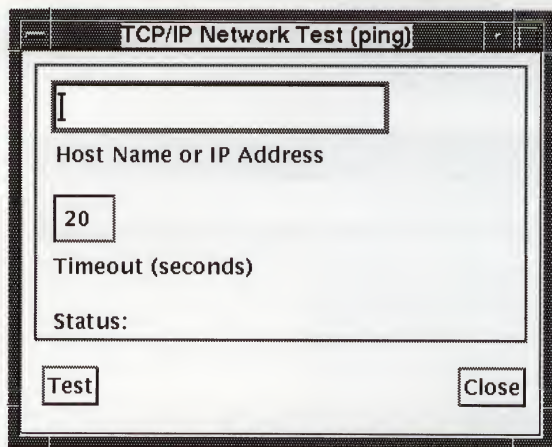
You can check if a TCP/IP host is available by using the TCP/IP Network Test (ping) dialog box. You specify a host name or IP address and a timeout period for the test. The terminal sends a ping (Packet InterNet Groper) packet once every second for the time you enter in the Timeout box. If you are testing the availability of a remote host on another network, you may want to increase the timeout value.

To display the TCP/IP Network Test (ping) dialog box, choose TCP/IP Network Test (ping)... from the Status submenu.



## Checking the Terminal's Status

### 10.2 Checking a TCP/IP Host System



LJ-01112-RAGS

#### To run the test:

1. Click on the Host Name or IP Address box and enter a host name or address. Use the  $\langle \text{X} \rangle$  key if you make a mistake.

*Examples:*

market  
12.212.231.22

2. Click on the Test button. The terminal displays the status of the host on the Status line:
  - Host name or IP Address is alive
  - No answer from Host name or IP Address
  - Trying...

#### To change the timeout period for performing the test:

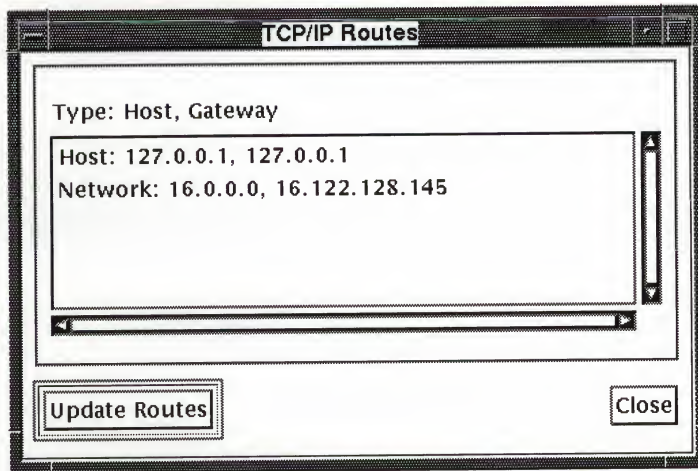
Click on the Timeout (seconds) box and enter a new timeout value from 1 to 99 seconds. Use the  $\langle \text{X} \rangle$  key if you make a mistake.

#### To dismiss the dialog box:

Click on the Close button.

## 10.3 TCP/IP Routes Dialog Box

You can display a list of TCP/IP routes from your network to hosts on other networks. To display the TCP/IP Routes dialog box, choose TCP/IP Routes... from the Status menu.



LJ-01113-RAGS

Routes are added to the scroll box four ways:

1. Static routes added using the Customize TCP/IP Routing Tables dialog box.
2. Interface routes add by interface initialization (NID startup).
3. Internet control message protocol (ICMP) redirects.
4. Dynamic routes added by RIP packets. Normally dynamic routing is enabled. See Section 7.2.6 to enable or disable.

**To enter your own routes into the TCP/IP Routes dialog box:**

See Section 7.2.6.

**To update the list:**

Click on the Update Routes button. The terminal displays the current list of static and dynamic routes.

**To dismiss the dialog box:**

Click on the Close button.

## Checking the Terminal's Status

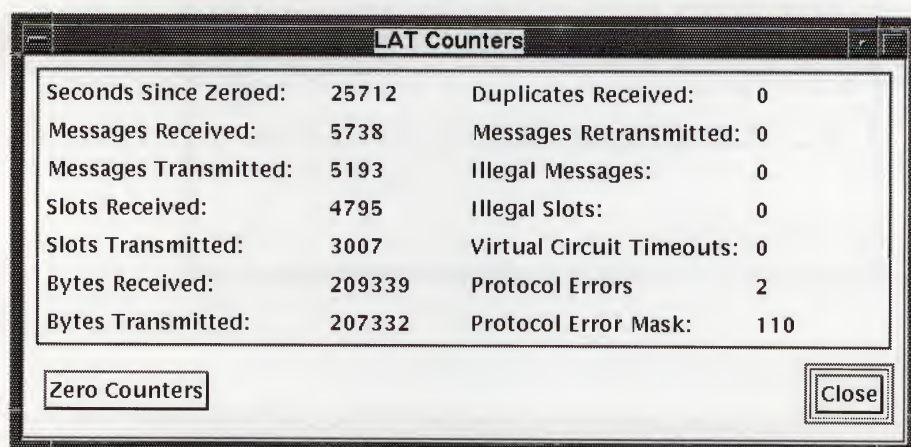
### 10.4 Displaying LAT and Ethernet Counters

## 10.4 Displaying LAT and Ethernet Counters

You can check the status of the terminal's LAT and Ethernet counters. Normally, the terminal updates the information in these dialog boxes every 5 seconds. You can set the update frequency time from 1 to 60 seconds, using the Customize Terminal Manager dialog box (Section 6.10).

### LAT Counters Dialog Box

To display the LAT Counters dialog box, choose LAT Counters... from the Status submenu. Table 10–1 describes each counter.



LJ-01155A-RAGS

### To set all counters to 0:

Click on the Zero Counters button. All counters in the list are set to 0.

### To dismiss the dialog box:

Click on the Close button.

**Table 10–1 LAT Counters Display Fields**

Field	Description
Seconds Since Zeroed	The number of seconds since these counters were set to 0.

(continued on next page)



## Checking the Terminal's Status

### 10.4 Displaying LAT and Ethernet Counters

**Table 10–1 (Cont.) LAT Counters Display Fields**

Field	Description						
Messages Received	The number of LAT protocol messages successfully received by the terminal.						
Messages Transmitted	The number of LAT protocol messages successfully transmitted by the terminal.						
Slots Received	The number of LAT slots received by the terminal. A slot represents a message segment for a particular LAT session.						
Slots Transmitted	The number of LAT slots transmitted by the terminal. A slot represents a message segment for a particular LAT session.						
Bytes Received	The number of data bytes received by the terminal over the LAT protocol.						
Bytes Transmitted	The number of data bytes sent by the terminal over the LAT protocol.						
Duplicates Received	The number of virtual circuit messages the terminal received that were not in the correct sequence.						
Messages Retransmitted	The number of virtual circuit messages that the terminal resent to remote nodes.						
Illegal Messages	The number of incorrectly formatted LAT messages the terminal has received.						
Illegal Slots	The number of incorrectly formatted slots of data in a LAT message that the terminal has received.						
Virtual Circuit Timeouts	The number of times that the terminal terminated a LAT connection because the remote node did not respond within the time allowed by the LAT protocol.						
Protocol Errors	The number of times that the terminal determined that the LAT protocol has been violated by a remote node. See the Protocol Error Mask field for more information.						
Protocol Error Mask	<p>A bit mask providing information about the LAT protocol errors detected by the terminal. The bits in the mask are numbered from right to left, starting with bit 0 on the right. The following bits are defined in the mask:</p> <table> <tr> <td>0</td><td>An unknown LAT message type was received.</td></tr> <tr> <td>1</td><td>An invalid LAT START message was received.</td></tr> <tr> <td>2</td><td>A zero-valued virtual circuit reference was received.</td></tr> </table>	0	An unknown LAT message type was received.	1	An invalid LAT START message was received.	2	A zero-valued virtual circuit reference was received.
0	An unknown LAT message type was received.						
1	An invalid LAT START message was received.						
2	A zero-valued virtual circuit reference was received.						

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## Checking the Terminal's Status

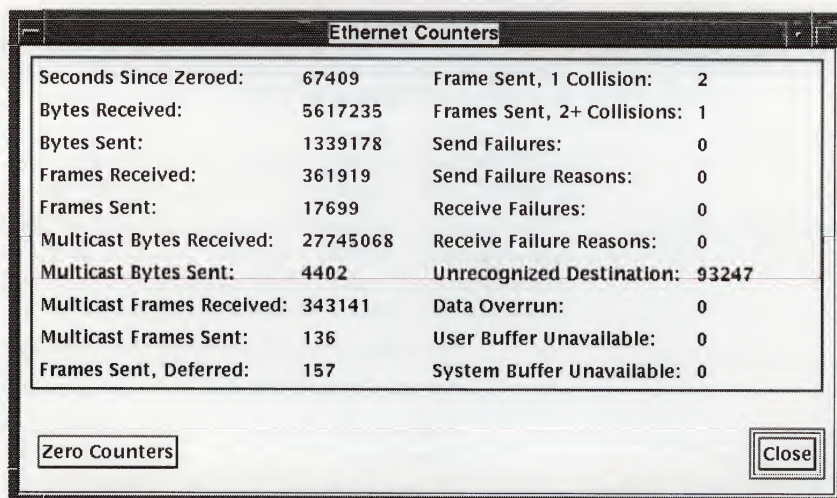
### 10.4 Displaying LAT and Ethernet Counters

**Table 10-1 (Cont.) LAT Counters Display Fields**

Field	Description
3	An out-of-range virtual circuit reference was received.
4	A reference to a nonexistent virtual circuit was received.
5	A reference to a virtual circuit no longer in use was received.
6	An invalid LAT STOP message was received.
7	An invalid reference to a remote slot was received.
8	A reference to a nonexistent slot was received.
9	A credit violation was detected.
10	A repeated creation of a slot was detected.
11	An invalid sequence number was received.
12	A repeated disconnect of a slot was detected.

#### Ethernet Counters Dialog Box

To display the Ethernet Counters dialog box, choose Ethernet Counters... from the Status submenu. Table 10-2 describes each counter.



LJ-01156A-RAGS

## Checking the Terminal's Status

### 10.4 Displaying LAT and Ethernet Counters

#### To set all counters to 0:

Click on the Zero Counters button. All counters in the list are set to 0.

#### To dismiss the dialog box:

Click on the Close button.

**Table 10–2 Ethernet Counters Display Fields**

Field	Description
Seconds Since Zeroed	The number of seconds since these counters were set to 0.
Bytes Received	The number of bytes contained in datagrams successfully received by the terminal, excluding Ethernet header and CRC data.
Bytes Sent	The number of bytes contained in datagrams successfully sent by the terminal, excluding Ethernet header and CRC data.
Frames Received	The number of datagrams successfully received by the terminal, including multicast frames.
Frames Sent	The number of datagrams successfully sent by the terminal, including multicast frames.
Multicast Bytes Received	The number of bytes received by the terminal in multicast frames, excluding Ethernet header and CRC data.
Multicast Bytes Sent	The number of bytes sent by the terminal in multicast frames, excluding Ethernet header and CRC data.
Multicast Frames Received	The number of multicast frames received by the terminal.
Multicast Frames Sent	The number of multicast frames sent by the terminal.
Frames Sent, Deferred	The number of times that the terminal deferred a frame transmission because the datalink was in use.
Frames Sent, 1 Collision	The number of times the terminal sent a frame on the second attempt after a collision occurred on the first attempt.
Frames Sent, 2+ Collisions	The number of times the terminal successfully sent a frame after collisions during the first two or more attempts.

(continued on next page)



## Checking the Terminal's Status

### 10.4 Displaying LAT and Ethernet Counters

**Table 10–2 (Cont.) Ethernet Counters Display Fields**

Field	Description
Send Failures	The number of times the Ethernet interface aborted a transmission request. If this count is not 0, see the Send Failure Reasons field for more information.
Send Failure Reasons	<p>A bit mask providing information about the reason for a send failure if the Send Failures counter is not 0. The bits in the mask are numbered from right to left, starting with bit 0 on the right. The following bits are defined in the mask:</p> <ul style="list-style-type: none"><li>0 A transmission failed to complete after 16 retries, usually due to excessive collisions.</li><li>1 A loss of carrier occurred on the Ethernet during a transmission.</li><li>2 A short circuit occurred on the Ethernet during a transmission.</li><li>3 An open circuit occurred on the Ethernet during a transmission.</li><li>4 Heartbeat error.</li><li>5 Data underflow.</li></ul>
Receive Failures	The number of frames received with an error condition. For more information, see the Receive Failure Reasons field.
Receive Failure Reasons	<p>A bit mask providing information about the type of receive failures encountered if the Receive Failures counter is not 0. The bits in the mask are numbered from right to left, starting with bit 0 on the right. The following bits are defined in the mask:</p> <ul style="list-style-type: none"><li>0 A block check error. The received frame did not pass the cyclical redundancy check (CRC).</li><li>1 A framing error. The received packet did not contain an integral number of 8-bit bytes.</li></ul>
Unrecognized Destination	The number of frames received by the terminal that did not contain a multicast address or protocol type recognized by the terminal. These frames are discarded.
Data Overrun	The number of times that the terminal's hardware lost an incoming frame because it was unable to keep up with the data rate.

(continued on next page)

## Checking the Terminal's Status

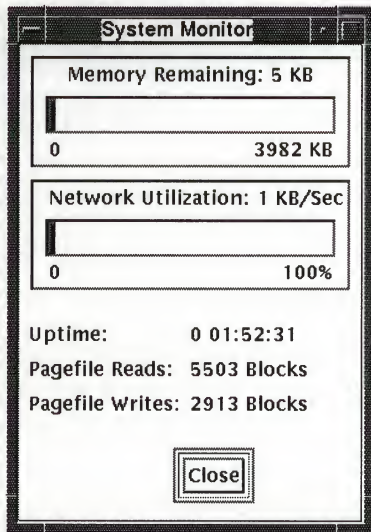
### 10.4 Displaying LAT and Ethernet Counters

**Table 10–2 (Cont.) Ethernet Counters Display Fields**

Field	Description
User Buffer Unavailable	Currently unused. Should always be 0.
System Buffer Unavailable	The number of times that the terminal's software did not have a buffer available to receive an incoming frame (MISS error).

## 10.5 Monitoring the Terminal's Memory and Network Use

You can use the System Monitor dialog box to monitor the amount of local memory available for use by the terminal. You can also monitor the percent of the terminal's network capacity currently being used. Normally, the terminal updates this information every 5 seconds. You can set the update frequency time from 1 to 60 seconds, using the Customize Terminal Manager dialog box (Section 6.10). To display the System Monitor dialog box, choose System Monitor from the Status submenu.



LJ-0111A-RAGS

**Memory Remaining:** Indicates how much of the local memory installed in the terminal is currently available for use.

**Network Utilization:** Indicates what percent of the network capacity of the terminal is currently being used.

**Uptime:** Indicates how long the terminal has been running since being booted.

## Checking the Terminal's Status

### 10.5 Monitoring the Terminal's Memory and Network Use

**Pagefile Reads:** Indicates the number of blocks of memory read by the terminal since being booted.

**Pagefile Writes:** Indicates the number of blocks of memory written by the terminal since being booted.

#### To dismiss the dialog box:

Click on the Close button.

### 10.6 Checking the Terminal's System Configuration

You can use the System Configuration dialog box to check the terminal's software version, network addresses, work group, active font path, installed options, and amount of installed memory.

To display the System Configuration dialog box, choose System Configuration... from the Status submenu.

System Configuration	
VXT Software:	Monochrome Host Based VXT V2.0
System Image:	VXT020.SYS on server ROM
Pagefile:	N/A
Active Font Path:	VXT - LOCAL
Ethernet Hardware Address:	08-00-2B-25-11-22
Ethernet Active Address:	AA-00-04-00-C0-BB
IP Address:	16.122.123.345
DECnet Address:	55.123
Total Memory:	8 Megabytes
Options:	None
Diagnostic Revision:	V1.4
Terminal 08002B251122 on server Local Terminals	
Work Group Local on server Local Terminals	
Resource files currently in use	
[Update] [Close]	

LJ-01110B-RAGS

Table 10-3 describes the System Configuration fields:



## Checking the Terminal's Status

### 10.6 Checking the Terminal's System Configuration

**Table 10-3 System Configuration Display Fields**

Field	Description
VXT Software:	<p>Lists the VXT software version and type:</p> <p>{Monochrome, Color} {Host-Based, Server-Based} VXT Vn.n</p> <p>A plus symbol (+) after the word Monochrome or Color indicates the terminal has a VXT 2000+ video board installed.</p>
System Image:	<p>Lists the system image name of the VXT software in use and the name of the server supplying the software. The default system image name for VXT Version 2.0 software is VXT or VXT020.</p> <p><b>For host-based software:</b> the displayed server name is always ROM, because VXT host-based software is loaded into the terminal's ROM memory and does not use an InfoServer for memory services.</p> <p><b>For server-based software:</b> the server name is the name of the InfoServer system from where the software was loaded.</p> <p>If you have several InfoServer systems with VXT software on your network, the terminal may use different servers to load software, provide fonts, and store terminal and work group customizations.</p>
Pagefile:	<p><b>For server-based software:</b> this field lists the name of the InfoServer pagefile the terminal is using for memory paging services. The pagefile resides on the InfoServer that loaded the terminal's VXT software.</p> <p>If a pagefile has not been opened yet, this field displays No Pagefile.</p> <p><b>For host-based software:</b> this field lists N/A for not applicable.</p>

(continued on next page)

## Checking the Terminal's Status

### 10.6 Checking the Terminal's System Configuration

**Table 10-3 (Cont.) System Configuration Display Fields**

Field	Description
Active Font Path:	<p>Lists the location of the fonts currently in use. Font sets are separated by commas.</p> <p><b>For host-based software:</b> by default, the terminal uses the LOCAL font set loaded with VXT software into the terminal's local memory:</p> <p>VXT - LOCAL</p> <p>If you are using fonts from a host, the host name appears:</p> <p>HOST - FONT SET[, FONT SET, ...]</p> <p><b>For server-based software:</b> the font path indicates the name of the InfoServer system supplying fonts.</p> <p>SERVER - FONT SET[, FONT SET, ...]</p>
Ethernet Hardware Address:	Lists the terminal's Ethernet physical address, set at the factory.
Ethernet Active Address:	<p><b>If you use DECnet:</b> this field lists the terminal's global network address, in the network service access point (NSAP) format. DECnet derives this address from the Ethernet hardware address.</p> <p><b>If you use TCP/IP or LAT:</b> this field lists the same address as the Ethernet Address field.</p>
IP Address	Lists the terminal's Internet protocol address, for communicating with systems that use the TCP/IP protocol. If you have not entered an IP address in the Customize TCP/IP dialog box, this field is empty.
DECnet Address	Lists the terminal's DECnet address, for communicating with systems on a wide area network that use the DECnet protocol. If you have not enabled the DECnet protocol and entered an DECnet address in Customize DECnet dialog box, this field is empty.
Total Memory:	Lists the amount of memory installed in the terminal, from 4 megabytes to 18 megabytes.
Options:	<p>Lists any option boards installed in the terminal:</p> <p>Image                      VXT image accelerator board</p>
Diagnostic Revision:	Lists the terminal's ROM revision level.

(continued on next page)

## Checking the Terminal's Status

### 10.6 Checking the Terminal's System Configuration

**Table 10–3 (Cont.) System Configuration Display Fields**

Field	Description
Resource files currently in use:	<p>Lists the name and location of the terminal and work group resource files that store the terminal's customizations.</p> <p><b>For host-based software:</b> the terminal and work group resource files are always listed on the Local Terminals server.</p> <p><b>For server-based software:</b> the terminal and work group resource files reside on the same InfoServer system. This system may be a different InfoServer system than the one that loads the terminal's VXT software.</p> <p>The system manager may have new terminals join the Unregistered Terminals work group.</p>

#### **To display updated information:**

Click on the Update button. The terminal displays updates any information that has changed since you opened the dialog box.

#### **To dismiss the dialog box:**

Click on the Close button.





# 11

## Using VXT EX Software

This chapter describes how to load and use VXT EX software with the terminal. The chapter covers the following major topics:

- VXT EX Software
- Loading VXT EX Software
- Creating a Session
- VXT EX Options Dialog Box

### 11.1 VXT EX Software

VXT EX (essential X server) software is a minimal version of VXT software, without any local applications such as the Terminal Manager window, VXT DECterm and VXT 3270 windows, and the Motif window manager. VXT EX software lets you create X sessions with minimal memory installed in the terminal. The system you connect to must provide all window management and terminal emulation features.

VXT EX software provides a single dialog box for creating an X session. You can create an X session to systems that support the TCP/IP or LAT transports.

VXT EX software

- Requires only the minimum 4 megabytes of installed memory
- Requires host-based clients for window management and terminal emulation
- Does not support printing to locally attached printers
- Requires a mouse or pointing device

## 11.2 Loading VXT EX Software

When you turn on or reboot the terminal, it normally loads full-function VXT software. There are two ways to load VXT EX software instead of VXT software:

- Specify VXT EX software in the Customize Boot dialog box and reboot the terminal. To specify host-based operation, see Section 7.6.2. To specify server-based operation, see Section 7.6.3.
- Enter a BOOT command that specifies VXT EX software (Section 7.6.5).

## 11.3 Creating a Session

When you reboot the terminal with VXT EX software, the terminal displays the VXT EX connection dialog box. You use the dialog box to create an X session to a host system. You can create multiple X sessions.

**VXT EX V2.0**

<b>Language</b>	<b>X Session</b>
<input checked="" type="radio"/> English	<input type="radio"/> LAT
<input type="radio"/> Français	<input checked="" type="radio"/> IP (xdm)
<input type="radio"/> Deutsch	

Host IP Address

TFTP Font Path

IP Name Server

Please select the Connect Button to start your X session.

Set font path succeeded; 1136 fonts available.  
Terminal Manager customizations saved.  
Terminal Manager customizations saved.  
Set font path succeeded; 708 fonts available.  
Terminal Manager customizations saved.

LJ-03007-RAGS

## Using VXT EX Software

### 11.3 Creating a Session

The Video Alignment button is for VXT 2000 model VX227 windowing terminals only. This button provides centering and rotation controls to align the screen display if necessary. See Section 6.12.

#### **To connect to a host system:**

1. Choose your display language. The default is English.
2. Choose the communication transport to use for the X session—LAT or IP.
3. **For LAT:** Enter your LAT Service Name. By default, the host system you connect to supplies your fonts.

**For IP:** Enter your Host IP Address, TFTP Font Path, and IP Name Server.

Your terminal's IP address and name server must be defined on a host system by your system manager. See Section 7.2.4.

4. Click on the Save button if you want to save your host settings.  
If you save your host settings, the terminal automatically tries to establish a connection to that host whenever you turn on or reboot the terminal. The terminal does not display the VXT EX dialog box.  
If you do not save your settings, the terminal uses these settings for the current session only. The next time you turn on or reboot the terminal, it will display the VXT EX dialog box again.
5. Click on the Connect button. If a connection is made, the terminal displays your host system's login prompt.  
If a connection is not made, the terminal redisplay the VXT EX dialog box.
6. Log in to your host system.

#### **To redisplay the VXT EX dialog box:**

Press the **F3** key.

You can change your settings or create a second X session.

#### **To switch from VXT EX to VXT software:**

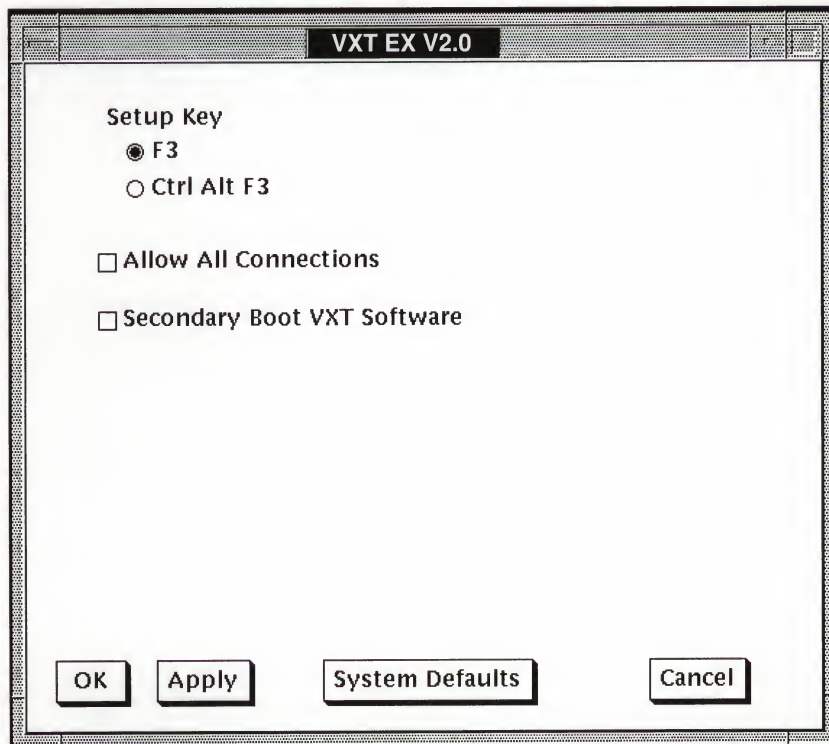
If you are using host-based operation, you must halt the terminal and enter a BOOT command that specifies VXT software. See Section 7.6.5.

If you are using server-based operation, you can choose VXT software from the VXT EX options box (Section 11.4).



## 11.4 VXT EX Options Dialog Box

You can specify VXT EX option settings by choosing the Options... button in the VXT EX dialog box. When you click on Options, the terminal displays the VXT EX options dialog box:



LJ-03025-RAGS

From the VXT EX options dialog box, you can change the following settings:

☐ **Setup Key**

Normally, you use the **F3** key to display the VXT EX dialog box. You can choose to use the **Ctrl Alt F3** key sequence instead.

☐ **Allow All Connections**

Normally, other systems and users cannot connect to your terminal when you are using VXT EX software. If you click on the Allow All Connections button, any system on the Ethernet can establish an X connection to your terminal.

## Using VXT EX Software

### 11.4 VXT EX Options Dialog Box

#### ☐ Secondary Boot VXT Software

If your terminal operates in server-based mode, you can use this button to switch from VXT EX software to full-function VXT software. The VXT software image must be available on an InfoServer system in your network. Your new setting takes effect the next time you turn on or reboot the terminal. You can reboot the terminal by pressing the **Ctrl**+left **Alt**+keypad **.** sequence.

Host-based terminals and server-based terminals operating in host-based mode cannot use this option. However, you can switch to VXT software by entering a boot command (Section 7.6.5).

#### **To close the Options dialog box:**

Click on the Cancel button.



# 12

## Using Your Keyboard

You can use one of the following keyboards with your terminal:

- ANSI Keyboard
- Short ANSI Keyboard
- The PC Keyboard

This chapter describes the basic functions of the keys and indicators on each keyboard. The chapter also describes how to use the keyboard instead of the mouse to navigate through windows and to choose items from menus and dialog boxes. Finally, the chapter describes how to type additional characters not shown on the keyboard keys.

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### VXT 3270 Keyboard Functions

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For keyboard functions in VXT 3270 windows, see Chapter 9.

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## 12.1 ANSI Keyboard

The ANSI keyboard comes in many versions for use with different languages and dialects. The only physical difference between these keyboards are the legends on the keys.

### 12.1.1 Keyboard Dialect

The terminal is initially set to work with the North American/United Kingdom keyboard. If you have a keyboard for a different language or you want to use the British dialect, you must change the Keyboard Type setting in the Customize Keyboard dialog box (Section 6.3).



## Using Your Keyboard

### 12.1 ANSI Keyboard

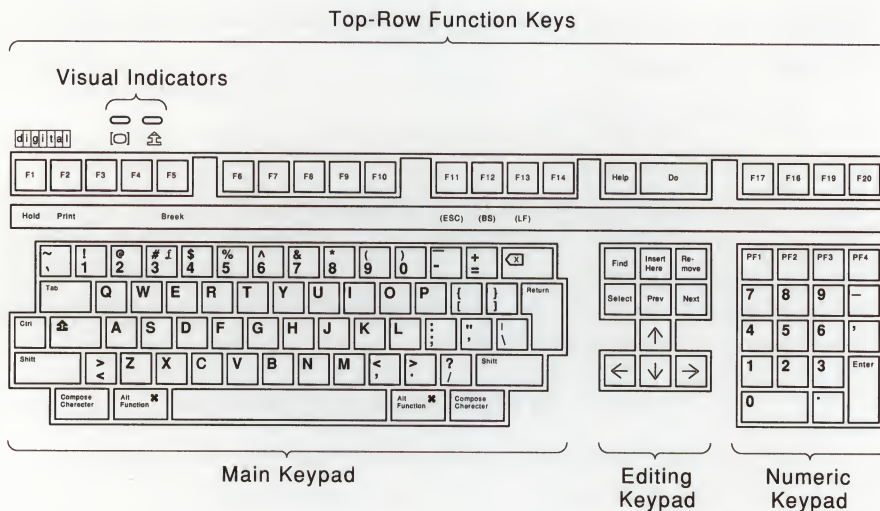
#### 12.1.2 Layout

The keyboard has four groups of keys and two visual indicators. The keys are grouped by function.

- Main keypad
- Editing keypad
- Numeric keypad
- Top-row function keys

The keyboard also has two audible indicators, a keyclick and bell.

The following figure shows the North American/United Kingdom keyboard:



GSF\_1436\_89.DG

#### 12.1.3 Main Keypad

The main keypad is similar to a typewriter keyboard with alphanumeric characters, punctuation marks, and **Shift** keys. The main keypad also has a number of keys not found on a standard typewriter, such as the **Ctrl** modifier key and the **Compose Character** and **Alt** prefix keys. The German keyboard has a **Group Shift** key and **Alternate Shift** key instead of **Compose Character** keys.

**Modifier keys** are pressed in combination with another key, to modify the code sent by that key. **Prefix keys** are pressed and released before pressing another key, to change the function of one or more keystrokes.

## Special-Function Keys

The main keypad has the following special-function keys:

**Tab**

In VXT DECterm windows, pressing **Tab** sends a horizontal tab, which normally moves the cursor to the next tab stop. Applications can change tab stops. In the Terminal Manager window screens and in some DECwindows menus, **Tab** moves the cursor to the next text-entry box.

**Ctrl**

Holding down **Ctrl** and pressing another key sends a control code to the host.

For example, **Ctrl Z** means to hold down **Ctrl** and press the **Z** key.

**Shift**

There are left and right **Shift** keys. Holding down **Shift** and pressing a standard key sends the shifted (top) character on the key.

Holding down **Shift** and pressing a special-function key starts a predefined control function. For example, **Shift F2** (Print) means to hold down **Shift** while pressing the **F2** (Print) key.

**Lock**

Pressing the lock key down puts the keyboard in caps lock mode or shift lock mode. You can set the mode from the Customize Keyboard dialog box (Section 6.3). The default setting is Caps Lock.

- In caps lock mode, the alphabetic keys send their uppercase or shifted character when pressed alone. You can use a **Shift** key to send the shifted character on other keys. You turn caps lock mode on and off by pressing and releasing the lock key.
- In shift lock mode, all keys on the main keypad send their shifted character. You can turn shift lock mode on or off by pressing the **Lock** key.

When the lock key is down, the lock indicator on the keyboard turns on.

**Return**

Pressing **Return** sends either a carriage return or a carriage return and a line feed (newline). You can choose the function of the **Return** key from the VXT DECterm General Options dialog box (Section 8.5).

**<X>** Backarrow  
key

Pressing the **<X>** key normally sends a delete (DEL) character. Many applications use DEL to erase one character to the left of the cursor.

You can make the **<X>** key send a backspace (BS) character instead of DEL. You can select the function of the **<X>** key from the VXT DECterm Keyboard Options dialog box (Section 8.6).

**Space bar**

Pressing the space bar sends a space (SP) character. You use spaces to separate words or move the cursor forward.

## Using Your Keyboard

### 12.1 ANSI Keyboard



(left and right)



(German)



(German)



(left and right)

These are prefix keys, used to generate characters that do not appear as standard keys on your keyboard. See Section 12.5.3.

On the German keyboard, the **Compose Character** key is replaced by **Group Shift** and **Alternate Shift**.

You use **Group Shift** as a prefix or modifier key, to type the characters on the right half of keycaps. See Section 12.5.4.

**Alternate Shift** is a modifier key, used to generate a no break space (NBSP) or soft hyphen (SHY) character.

**Alternate Shift** + space bar = NBSP character.

**Alternate Shift** - = SHY character.

You use **Alt** with other keys, to select alternate functions defined by your application software.

You can use **Alt** as a **Compose Character** key, by holding down the **Alt** and space bar. This action starts a compose character sequence.

Your keyboard has both **Compose Character** and **Alt Function** keys. If a workstation application's documentation specifies use of the **Compose Character** key as a modifier for keyboard keys or mouse buttons, you may need to use the **Alt** key instead on the terminal.

#### 12.1.4 Editing Keypad

The editing keypad has four arrow keys and six editing keys.

Normally, pressing an arrow key moves the text cursor in the direction of the arrow. For example, pressing the **↓** key moves the cursor down one line.

If you press **Ctrl Shift F3**, you can use the editing keypad to perform some mouse functions. In this mode, the arrow keys move the mouse pointer. The **Select**, **Prev**, and **Next** keys correspond to the three mouse buttons. The mouse continues to operate. There is no indication the mode is on, but the arrow keys will not work for normal editing functions.

To turn this mode off, press **Ctrl Shift F3** again.

The six editing keys generally perform screen control functions defined by application software.



### 12.1.5 Numeric Keypad

Numeric keypad keys often have functions assigned by your software applications, especially **PF1** to **PF4**. For example, you may use a spreadsheet program that assigns special functions to these keys. See your application manuals for details.

You can use the numeric keypad to enter numeric data as you would with a calculator. Programmers can use this keypad to do hexadecimal compose sequences. See Section 12.5.7.

When you use VXT DECterm windows, you can set the keypad to work as a numeric keypad or application keypad. See the VXT DECterm Keyboard Options dialog box in Section 8.6.

**Enter** The **Enter** key on the numeric keypad normally works like the **Return** key. **Enter** sends a carriage return, or a carriage return and a line feed. You can select the function of the **Return** key from the VXT DECterm General Options dialog box (Section 8.5).

Application software may use **Enter** as a special-function key.

### 12.1.6 Top-Row Function Keys

#### Predefined Keys

The first five top-row keys, **F1** to **F5**, are predefined to perform the following functions. You cannot change these functions. Your application software defines the functions of the remaining top-row keys. See your application manual for details.

- |                   |  |
|-------------------|--|
| <b>F1</b> (Hold)  | Pressing <b>F1</b> (Hold) puts the screen display in the active window on hold. This stops the scrolling of text, which can make reading easier. When you press <b>F1</b> (Hold), the hold indicator on the keyboard turns on. Pressing <b>F1</b> (Hold) again allows scrolling to resume. |
| <b>F2</b> (Print) | Pressing <b>F2</b> (Print) sends the text in the active window to the printer. The output may or may not correspond exactly to the display in the window. The output depends on the window size and font size. See Chapter 8 for more information on printing.                             |
| <b>Ctrl F2</b>    | Pressing <b>Ctrl F2</b> (Print) turns auto print mode on or off. In auto print mode, you can automatically print each line of text as it is received from the host system.   |
| <b>F3</b>         | This key if enabled in the Customize Terminal Manager window lets you hide or display the Terminal Manager window. See Section 6.10.   |

## Using Your Keyboard

### 12.1 ANSI Keyboard

**Ctrl Shift F3**

Pressing **Ctrl Shift F3** lets you use the editing keypad to perform some mouse functions. In this mode, the arrow keys move the mouse pointer. The **Select**, **Prev**, and **Next** keys correspond to the three mouse buttons. The mouse continues to operate. There is no indication the mode is on, but the arrow keys will not work for normal editing functions.

To turn this mode off, press **Ctrl Shift F3** again.

**F4**

This key is disabled.

**F5 (Break)**

Pressing **Break** ends communication with your system if you are using a VXT DECterm window running over the serial communication line.

Pressing **F5 (Break)** has no effect on LAT, TCP/IP, or DECnet connections.

**Shift F5**

Pressing **Shift F5 (Break)** performs a disconnect on any VXT DECterm window session (LAT, TCP/IP, DECnet, or serial line). A disconnect is normally used to end communication with a modem in preparation for another call.

**Ctrl F5**

Pressing **Ctrl F5 (Break)** sends the answerback message to the system using LAT, TCP/IP, DECnet, or the serial line.

---

#### Note

---

**Ctrl F5 (Break)** sends the answerback message even if you set the Conceal Answerback Message feature in the VXT DECterm Keyboard Options dialog box (Section 8.6).

---

#### User-Defined Keys and Application-Specific Keys

The function of the remaining top-row keys, **F6** to **F20**, often depends on your application software. Refer to your application software manuals for a description of key functions. You can also define the function of these keys yourself.

**F6** to **F20**

When pressed alone, these keys send predefined programming sequences to the host system. Applications that recognize these sequences can use the keys to perform various functions.

#### In VT100 and VT52 modes

Keys **F11**, **F12**, and **F13** send control characters ESC, BS, and LF respectively. Keys **F6** to **F10** and **F14** to **F20** do not function.

Shift F6  
to  
Shift 20

#### User-defined keys (UDKs)

Pressing Shift and one of these keys sends the user-defined function for that key. You can define keys F6 to F20 by using programming sequences. You can use any sequence of characters in your definitions. Definitions are loaded from the host system. See the *VT320 Programmer Reference Manual* for details.

### 12.1.7 Data Processing Keys

Most versions of the keyboard have some keys with characters on the left half and right half of their keycap. Normally, you use the characters on the left half of the key. These are called typewriter characters. The characters on the right half are for data processing use.

You can set these keys to send their typewriter or data processing characters, by choosing the keyboard mode. See Section 6.3.

For the following keyboard types, the typewriter and data processing settings are identical:

- North American and Dutch
- When using 8-bit multinational characters: British, German, and Portuguese

If you use 7-bit national replacement character sets (NRCs), make sure you have chosen the correct NRC to match your keyboard. All data processing keyboards, regardless of language, expect the U.S. ASCII character set to be chosen. See Section 8.7.

#### # £ Key

The North American/United Kingdom standard keyboard has only one key with three characters.

To use the £ symbol, you choose the British Keyboard type in the Customize Keyboard dialog box (Section 6.3). To use the # symbol, you choose the North American Keyboard type. There are no separate data processing legends on the North American/United Kingdom keyboard.

### 12.1.8 Compose Characters

You can type compose sequences to display many more characters than those shown on the keycaps. For example, you can display accented letters. See Section 12.5.



## Using Your Keyboard

### 12.1 ANSI Keyboard

#### 12.1.9 Text-Editing Functions

You can use the following key sequences to move the cursor or delete text in most applications.

To move ...	Press ...
To the next word	Shift →
To the previous word	Shift ←
To the beginning of the line	F12 or Ctrl H
To the end of the line	Shift F12 or Ctrl E

To delete ...	Press ...
The characters to the left of the cursor, up to and including the beginning of the word	F13 or Ctrl J
The characters to the right of the cursor, up to and including the end of the word	Shift F13
The character to the left of the cursor and move all text to the right of the deleted character one space to the left	⇐X
The character to the right of the cursor and move all text to the right of the deleted character one space to the left	Shift ⇐X
All characters to the start of the line	Ctrl U

#### 12.1.10 Indicator Lights

The keyboard has two indicator lights that work with the **F1** (Hold) and lock keys. The indicator lights are at the upper-left of the keyboard.



Turns on or off when you press the **F1** (Hold) key.



Turns on or off when you press the lock key.

#### 12.1.11 Audible Indicators

The keyboard has two audible indicators, a keyclick and a bell. You can use the bell as a margin bell, warning bell, or both. You can turn off the keyclick and bell, or adjust their volume. See the Customize Keyboard dialog box (Section 6.3).

### 12.1.12 Keyclick

You hear the keyclick sound each time you press a key that sends a code or causes the terminal to take some immediate action. **[Shift]** and **[Ctrl]** never click. If a key is autorepeating, the keyclick will repeat once for each character or key sequence sent. You can turn off the keyclick in the Customize Keyboard dialog box.

### 12.1.13 Bell

The bell tone is a beeping sound. You can use the bell as a margin bell, warning bell, or both.

#### Margin Bell

This bell sounds when the cursor is eight characters from the right margin.

#### Warning Bell

This bell sounds for any of the following conditions:

- During the power-up self-test
- When the terminal receives a bell (BEL) character from the host system
- After a compose character error
- After pressing a key for a character that is not available in the current character set

## 12.2 Short ANSI Keyboard

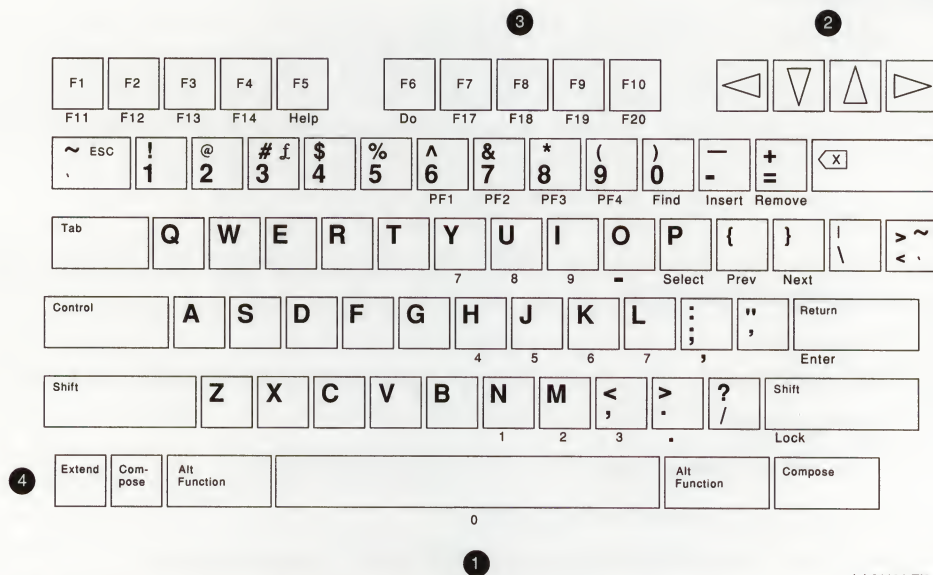
The short ANSI keyboard is a compact version of the ANSI keyboard, for those who make little use of auxiliary editing and numeric keypads. Most keys on the short ANSI keyboard work the same way as on the ANSI keyboard. This section describes how the short ANSI keyboard differs from the ANSI keyboard.

The short ANSI keyboard is only available in the North American/United Kingdom version. The keyboard has three groups of keys. The keys are grouped by function.

The keyboard also has two audible indicators, a keyclick and bell.

## Using Your Keyboard

### 12.2 Short ANSI Keyboard



LJ-01101-T10

- ① Main keypad
- ② Arrow keys
- ③ Top-row function keys
- ④ Extend key

#### 12.2.1 Main Keypad

The layout of the main keypad is similar to the ANSI keyboard, but includes an **Extend** key. The **Extend** key lets you enter the same keystrokes as the keypad and function keys found on the longer ANSI keyboard.

#### 12.2.2 Using **Extend** Key Sequences for Keypad and Function Keys

You can use two-stroke **Extend** key sequences to perform the same functions as the following keys that are on the longer ANSI keyboard:

- **F11** to **F20**
- Editing keypad
- Numeric keypad

These functions are printed on the front of certain keys on the short ANSI keyboard. For example, the **P** key also serves as the **Select** editing key. To access this second function, you press the **Extend** key first. The following table lists all the two-stroke **Extend** key sequences:



## Using Your Keyboard

### 12.2 Short ANSI Keyboard

To Select ...	Press ...	To Select ...	Press ...
---------------	-----------	---------------	-----------

#### Top-Row Function Keys

F11 to F20	Extend F1 to Extend F10
---------------	----------------------------

#### Editing Keypad Keys

Find	Extend 0	Select	Extend P
Insert	Extend -	Prev	Extend {
Remove	Extend =	Next	Extend }

#### Numeric Keypad Keys

PF1	Extend 6	4	Extend H
PF2	Extend 7	5	Extend J
PF3	Extend 8	6	Extend K
PF4	Extend 9	,	Extend L
7	Extend Y	1	Extend N
8	Extend U	2	Extend M
9	Extend I	3	Extend ,
-	Extend O	.	Extend .
		0	Extend space bar

#### Special-Function Keys

The main keypad has the same special-function keys as the ANSI keyboard. The only difference from the ANSI keyboard is the **Extend** key.



**Extend** *front*









Pressing a two-stroke **Extend** sequence lets you perform the same functions as the following keys on the longer ANSI keyboard: **F11** to **F20**, editing keypad, and numeric keypad. Functions are printed on the front of short ANSI keys.



## Using Your Keyboard

### 12.2 Short ANSI Keyboard

Pressing the  and right  keys puts the keyboard in caps lock mode or shift lock mode. You can select the mode from the Customize Keyboard dialog box (Section 6.3). The default setting is Caps Lock.

- In caps lock mode, the alphabetic keys send their uppercase or shifted character when pressed alone. You can use a  key to send the shifted character on other keys. You turn Caps Lock mode on and off by pressing the  and right  keys.
- In shift lock mode, all keys on the main keypad send their shifted character. You can turn shift lock mode on by pressing the  and right  keys. You can turn it off by pressing either the  and right  keys or the  key.



The  key and  key work the same way as on the ANSI keyboard, but the keycap legends are slightly different.



Pressing this key normally sends the ` or ~ character.







You can also use this key to send the escape (ESC) control character, by choosing the Tilde Key Sends ESC button in the VXT DECterm Keyboard Options dialog box (Section 8.6).






If you use the  key to send the ESC character, you may want to use the  key to send the ` and ~ characters. To do this, choose the Angle Bracket Key Sends ~ in the VXT DECterm Keyboard Options dialog box (Section 8.6).

#### 12.2.3 Arrow Keys



The four arrow keys work the same as on the ANSI keyboard.

If you press   , you can use the editing keypad to perform some mouse functions. In this mode, the arrow keys move the mouse pointer. The , , and  keys correspond to the three mouse buttons. The mouse continues to operate. There is no indication the mode is on, but the arrow keys will not work for normal editing functions.

To turn this mode off, press    again.

#### 12.2.4 Top-Row Function Keys

##### Predefined Keys

The first five top-row keys,  to , have the same predefined functions as on the ANSI keyboard.

### User-Defined Keys and Application-Specific Keys

As on the ANSI keyboard, the function of the remaining top-row keys, **F6** to **F10** and **Extend F1** to **Extend F10**, often depends on your application software. Refer to your application software manuals for a description of key functions. You can also define the function of these keys yourself.

**F6** to **F10**  
and  
**Extend F1** to  
**Extend F10**

When pressed, these keys send predefined programming sequences to the host system. Applications that recognize these sequences can use the keys to perform various functions.

#### In VT100 and VT52 modes

Keys **Extend F1**, **Extend F2**, and **Extend F3** send control characters ESC, BS, and LF respectively. Keys **F6** to **F10** and **Extend F4** to **Extend F10** do not function.

---

#### Note

You can use the **~** key to send the ESC character. See the VXT DECterm Keyboard Options dialog box in Section 8.6.

---

**Shift F6**  
to  
**Shift F10**  
and  
**Shift Extend F1**  
to  
**Shift Extend F10**

#### User-defined keys (UDKs)

Pressing **Shift** and one of these key sequences sends the user-defined function for that key. You can define keys **F6** to **Extend F10** by using programming sequences. You can use any sequence of characters in your definitions. Definitions are loaded from the host system.

#### # £ Key

This key works the same way as on the ANSI keyboard.

To use the £ symbol, you select the British Keyboard setting in the Customize Keyboard dialog box (Section 6.3). To use the # symbol, you select the North American Keyboard setting.

### 12.2.5 Compose Characters

The **Compose** keys work the same as the **Compose Character** keys on the ANSI keyboard.

You can type compose sequences to display many more characters than those shown on the keycaps. For example, you can display accented letters. See Section 12.5.



## Using Your Keyboard

### 12.2 Short ANSI Keyboard

#### 12.2.6 Indicator Lights

The short ANSI keyboard does not have indicator lights.

#### 12.2.7 Audible Indicators

The short ANSI keyboard has the same two audible indicators as the ANSI keyboard, a keyclick and a bell. You can use the bell as a margin bell, warning bell, or both. You can turn off the keyclick and bell, or adjust their volume. See the Customize Keyboard dialog box (Section 6.3).

### 12.3 The PC Keyboard

You can use Digital's LK443 or LK444 PC keyboards with a VXT 2000 windowing terminal. The terminal does not support other PC keyboards.

You can operate the PC keyboard as a PC keyboard or as an ANSI keyboard (Section 12.1). This chapter describes using the PC keyboard keys in both modes.

#### 12.3.1 PC Keyboard Models—Setting the Keyboard Type

There are two PC keyboards, a worldwide model (LK443) and a North American model (LK444). This section shows the North American model.

- The North American model has 101 keys.
- The worldwide model has 102 keys. The worldwide model comes in the following versions, for use in different countries.

Belgium	Germany	Portugal	Switzerland
Denmark	Italy	Spain	United Kingdom
France	Norway	Sweden	

When you start up the terminal with a PC keyboard connected, the terminal uses the North American PC keymap by default. To choose the keymap for one of the worldwide models, change the Customize Keyboard Type to the appropriate country (Section 6.3).

#### 12.3.2 Using the ANSI Keyboard Layout

To switch from a PC keymap to an ANSI keymap, select one of the LK401 keyboard types (Section 6.3). When you switch to an ANSI keymap, the keyboard keys work like the keys on that ANSI keyboard. For example, if you have the LK443 North American PC keyboard, you might switch to the NORTH\_AMERICAN\_LK401AA keymap. To switch back to the North American PC keymap, you would choose the PC\_US\_LK443AA keymap.

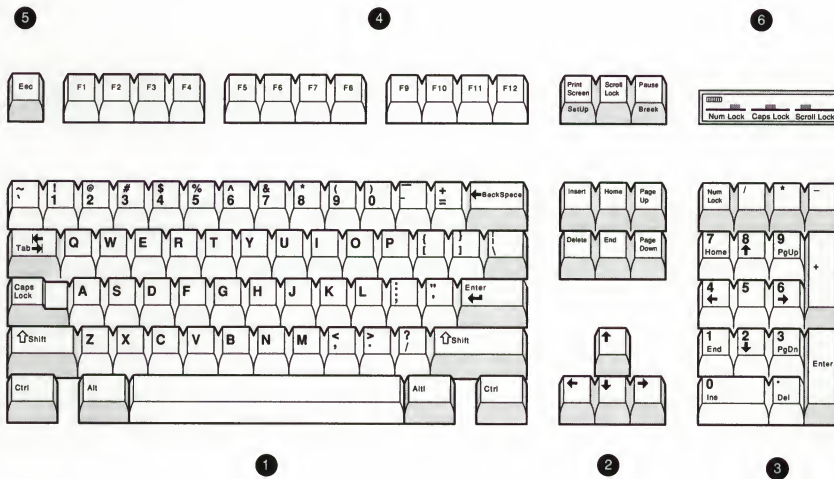
## Using Your Keyboard

### 12.3 The PC Keyboard

The PC keyboard does not have the following keys, which appear on the ANSI keyboard: **F16** Do, **F17**, **F18**, **F19**, **F20**, and the **-** hyphen key on the numeric keypad. Applications that use these keys may not work properly with the PC keyboard, unless the applications provide alternate keystrokes.

#### 12.3.3 Layout

The PC keyboard has four groups of keys and three indicator lights. The keys are grouped by function. The PC keyboard also has two audible indicators, a keyclick and bell.



LJ-00226-T10

- ① Main keypad
- ② Editing keypad
- ③ Numeric keypad
- ④ Top-row function keys
- ⑤ Escape key
- ⑥ Indicator lights

#### 12.3.4 Main Keypad

The layout of the main keypad is similar to a typewriter keyboard, with alphanumeric characters, punctuation marks, and **Shift** keys. The main keypad also has a number of keys not found on a typewriter, such as the **Ctrl** and **Alt** modifier keys.

**Modifier keys** are pressed in combination with another key, to modify the code sent by that key. **Prefix keys** are pressed and released before pressing another key, to change the function of one or more keystrokes.

## Using Your Keyboard

### 12.3 The PC Keyboard

#### Special-Function Keys

The main keypad and top row have the following special-function keys:

<b>Esc</b>	Pressing <b>Esc</b> begins a control sequence.
<b>Tab</b>	Pressing <b>Tab</b> moves the cursor to the next tab stop.
<b>Ctrl</b>	Holding down <b>Ctrl</b> and pressing another key sends a control code to the host.  For example, <b>Ctrl Z</b> means to hold down <b>Ctrl</b> and press the <b>Z</b> key.
<b>Caps Lock</b>	Pressing the <b>Caps Lock</b> key puts the keyboard in caps lock mode or shift lock mode. You can select the mode from the Customize Keyboard dialog box (Section 6.3). The default setting is Caps Lock mode. <ul style="list-style-type: none"><li>• In Caps Lock mode, the alphabetic keys send their uppercase or shifted character when pressed alone. You can use a <b>Shift</b> key to send the shifted characters on other keys. You turn Caps Lock mode on and off by pressing the <b>Caps Lock</b> key.</li><li>• In Shift Lock mode, all keys on the main keypad send their shifted character. You can turn Shift Lock mode on by pressing the <b>Caps Lock</b> key. You can turn it off by pressing either the <b>Caps Lock</b> key or the <b>Shift</b> key.</li></ul>
<b>Shift</b>	Holding down a <b>Shift</b> key and pressing a standard key generates the uppercase character on the key.
<b>Enter</b>	Pressing <b>Enter</b> sends a carriage return to the host, which usually puts the cursor either at the beginning of the next line or at the beginning of the same line.  Pressing <b>Enter</b> normally moves the cursor to the beginning of the next line.
<b>← Backspace</b>	Pressing <b>← Backspace</b> deletes one character to the left of the cursor.
Space bar	Pressing the space bar adds a space character. You use spaces to separate words or move the cursor forward.
<b>Alt</b>	<b>Alt</b> is used to generate characters or alternate functions that do not appear as standard keys on your PC keyboard. You can use <b>Alt</b> with another key to generate additional codes, or with the function keys to generate a third-level function for the key. See Section 12.1.8.  When you select the North American keyboard type, both <b>Alt</b> keys work the same.
<b>AltGr</b> (right)	You use <b>AltGr</b> with <b>Janus-faced</b> or front-faced keys to generate the third character on a keycap. The North American PC keyboard does not have an <b>AltGr</b> key.



The function of the **Print Screen**, **Scroll Lock**, and **Pause** keys depends on your operating system environment and the keyboard type selected. In a MS-DOS environment (MS-DOS emulation):

<b>Print Screen</b>	Prints the screen.
<b>Scroll Lock</b>	Stops the screen from scrolling.
<b>Pause</b>	Stops or cancels a command.

In a non MS-DOS environment, the function of **Print Screen**, **Scroll Lock**, and **Pause** is application-specific.

When you choose an LK401 ANSI keymap as the Keyboard Type, these three key functions are mapped to other top-row keys:

- The Print Screen function is mapped to **F13**.
- The Scroll Lock function is mapped to **F14**.
- The Pause function is mapped to **Help** (F15).

### 12.3.5 Janus-Faced and Front-Faced Character Keys

All PC keyboards, except the North American and United Kingdom, have keycaps with more than two characters. In most cases, the third character is on the top of the keycap, to the right of the first character. These keys are called Janus-faced character keys. In other cases the extra characters are on the front of the keycap. These keys are called front-faced character keys.

To display the third character on a Janus-faced or front-faced key:

- Press **AltGr** and the selected key.

### 12.3.6 Editing Keypad

The editing keypad has four arrow keys and six editing keys.

Pressing an arrow key normally moves the cursor in the direction of the arrow. For example, pressing the **↓** key moves the cursor down one line.

You can use the editing keys in several ways:

- For panning up or down a page, or for changing the size of a window on the screen.
- For special functions defined by the application software.

## Using Your Keyboard

### 12.3 The PC Keyboard

#### 12.3.7 Numeric Keypad

You can use the numeric keypad to enter numbers and arithmetic operators. If you use a MS-DOS emulator, you can also use the numeric keypad as a cursor keypad. You press the **[Num Lock]** key to change from a numeric to a cursor keypad and back. In cursor keypad mode, the arrow keys and the **[Home]** key work exactly like the arrow keys on the editing keypad.

#### 12.3.8 Audible Indicators

The PC keyboard has two audible indicators, a keyclick and a bell. You can use a margin bell, warning bell, or both. See Section 6.3.

#### 12.3.9 Keyclick

You hear the keyclick sound each time you press a key that sends a code or causes the terminal to take some immediate action. If a key is autorepeating, the keyclick will repeat once for each character or key sequence sent. Keys do not click under the following conditions:

- You press **[Shift]**, **[Ctrl]**, or **[Alt]**. These keys never click except when **[Shift]** is leaving the shift-lock state.
- You disable the Keyclick Volume in the Customize Keyboard dialog box (Section 6.3).
- You press a key or key combination that does not have a function under the current operating conditions.

#### 12.3.10 Bell

The bell tone is a beeping sound. You can use the bell as a margin bell, warning bell, or both.

##### Margin Bell

This bell sounds when the cursor is eight characters from the right margin.

##### Warning Bell

This bell sounds for any of the following conditions:

- During the power-up self-test
- When the terminal receives a bell (BEL) character from the host system
- After a compose character error

### 12.3.11 Redefining Keys

You can use the X application `xmodmap` to modify key definitions. Section 12.3.12 lists the default key definitions. Each key on the keyboard sends a unique keycode to the terminal, and each keycode is assigned a key symbol. The applications that you use perform actions based on key symbols.

To change a key's function, you redefine the key by changing the key symbol. For example, if you wanted to redefine the `[Insert]` key to work like the `[Find]` key, you would look up the keycode for the `[Insert]` key in the Section 12.3.12. Then you would assign the key symbol `Find` to that keycode by using the `xmodmap` program.

#### For UNIX, ULTRIX, and DEC OSF/1 AXP systems

Here is the command format for redefining a key:

```
% xmodmap -e "keycode 0x keycode = key_symbol"
```

#### Examples

- To define the `[Insert]` key to work like the `[Find]` key:

```
% xmodmap -e "keycode 0x8A = Find"
```

- To make the `[Insert]` key work normally again:

```
% xmodmap -e "keycode 0x8A = Insert"
```

#### For OpenVMS systems

---

#### Note

---

The `xmodmap` program is available for systems using a DECwindows Motif version later than Version 1.1.

---

First, define a logical name (like `xmodmap`) pointing to the `xmodmap` executable image on your system. For example:

```
$ xmodmap:==$DECW$UTILS:XMODMAP.EXE
```

Here is the command format for redefining a key:

```
$ xmodmap -e "keycode 0xkeycode = key_symbol"
```

#### Examples

- To define the `[Insert]` key to work like the `[Find]` key:

```
$ xmodmap -e "keycode 0x8A = Find"
```



## Using Your Keyboard

### 12.3 The PC Keyboard

- To make the `Insert` key work normally again:

```
$ xmodmap -e "keycode 0x8A = Insert"
```

#### 12.3.12 PC Keyboard Keycodes and Symbol Assignments

Table 12–1 lists the key labels, keycodes, and key symbols for each key on the North American PC keyboard.

**Table 12–1 PC Keyboard Keycodes and Symbol Assignments**

Key Label	Key Code	Key Symbol	Shifted Key Symbol
<b>Main Keypad Keys</b>			
↑ Shift	AB	Shift_R	
Alt	AC	Alt_L	
Ctrl	AD	Control_R	
↑ Shift	AE	Shift_L	
Ctrl	AF	Control_L	
Caps Lock	B0	Caps_Lock	
Alt Gr	B2	Alt_R	
← Backspace	BC	Delete	
Enter	BD	Return	
Tab	BE	Tab	
' ~	BF	quoteleft	asciitilde
1 !	C0	1	exclam
Q	C1	Q	
A	C2	A	
Z	C3	Z	
2 @	C5	2	at
W	C6	W	
S	C7	S	
X	C8	X	
3 #	CB	3	numbersign
E	CC	E	
D	CD	D	
C	CE	C	
4 \$	D0	4	dollar
R	D1	R	
F	D2	F	
V	D3	V	
Spacebar	D4	Space	

(continued on next page)

**Table 12–1 (Cont.) PC Keyboard Keycodes and Symbol Assignments**

Key Label	Key Code	Key Symbol	Shifted Key Symbol
<b>Main Keypad Keys</b>			
5 %	D6	5	percent
T	D7	T	
G	D8	G	
B	D9	B	
6 ^	DB	6	asciicircum
Y	DC	Y	
H	DD	H	
N	DE	N	
7 &	E0	7	ampersand
U	E1	U	
J	E2	J	
M	E3	M	
8 *	E5	8	asterisk
K	E7	K	
, <	E8	comma	less
9 (	EA	9	parenleft
O	EB	O	
L	EC	L	
. >	ED	period	greater
0 )	EF	0	parenright
P	F0	P	
; :	F2	semicolon	colon
/ ?	F3	slash	question
= +	F5	equal	plus
] }	F6	bracketright	braceright
\	F7	backslash	bar
- _	F9	minus	underscore
[ {	FA	bracketleft	braceleft
, "	FB	quoteright	quotedbl

(continued on next page)

## Using Your Keyboard

### 12.3 The PC Keyboard

**Table 12-1 (Cont.) PC Keyboard Keycodes and Symbol Assignments**

Key Label	Key Code	Key Symbol	Shifted Key Symbol
<b>Editing and Arrow Keypad Keys</b>			
Insert	8A	Insert	
Home	8B	Home	
Page Up	8C	Prior	
Delete	8D	Delete	
End	8E	End	
Page Down	8F	Next	
←	A7	Left	
→	A8	Right	
↓	A9	Down	
↑	AA	Up	
<b>Top-Row Function Keys</b>			
Esc	55	Escape	
F1	56	F1	
F2	57	F2	
F3	58	F3	
F4	59	F4	
F5	5A	F5	
F6	64	F6	
F7	65	F7	
F8	66	F8	
F9	67	F9	
F10	68	F10	
F11	71	F11	
F12	72	F12	
Print Screen	73	Print	
Scroll Lock	74	Scroll_Lock	
Pause	7C	Pause	

(continued on next page)



**Table 12–1 (Cont.) PC Keyboard Keycodes and Symbol Assignments**

Key Label	Key Code	Key Symbol	Shifted Key Symbol
<b>Numeric Keypad Keys</b>			
0	92	KP_0	
.	94	KP_Decimal	
Enter	95	KP_Enter	
1	96	KP_1	
2	97	KP_2	
3	98	KP_3	
4	99	KP_4	
5	9A	KP_5	
6	9B	KP_6	
+	9C	KP_Add	
7	9D	KP_7	
8	9E	KP_8	
9	9F	KP_9	
Num Lock	A1	Num_Lock	
/	A2	KP_Divide	
*	A3	KP_Multiply	
-	A4	KP_Subtract	

## Using Your Keyboard

### 12.4 Using the Keyboard Instead of the Mouse

## 12.4 Using the Keyboard Instead of the Mouse

This section describes how to use the keyboard to navigate through windows and choose items from menus and dialog boxes. You will find this section useful if you prefer using the keyboard rather than the mouse, or if your mouse is not working.

### 12.4.1 Using the Editing Keypad to Perform Mouse Functions

When you enable the editing keypad to perform mouse functions, you can still use your mouse. There is no indication the mode is on, but you cannot use the arrow keys for normal editing functions.

To...	Press...
Enable the editing keypad to perform mouse functions.	<b>Ctrl</b> <b>Shift</b> <b>F3</b>
Move the mouse pointer	<b>↑</b> , <b>↓</b> , <b>←</b> , <b>→</b>
Perform MB1 functions	<b>Select</b>
Perform MB2 functions	<b>Prev</b>
Perform MB3 functions	<b>Next</b>
Disable the editing keypad from performing mouse functions.	<b>Ctrl</b> <b>Shift</b> <b>F3</b> again

### 12.4.2 Using Menu Bars and Pull-Down Menus

To...	Press...
Move to the first menu in a menu bar	<b>F10</b>
Pull down a menu from the menu bar	<b>Alt</b> <i><b>mnemonic</b></i> *
Move to the next menu item in a pull-down menu	<b>↑</b> or <b>↓</b>
Move to another menu in the menu bar	<b>←</b> or <b>→</b>
Move from one pull-down menu to the preceding menu on the left in the menu bar	<b>←</b> , <b>Ctrl</b> <b>←</b> , or <b>Ctrl</b> <b>↑</b>
Move from one pull-down menu to the next menu on the right in the menu bar	<b>→</b> , <b>Ctrl</b> <b>→</b> , or <b>Ctrl</b> <b>↓</b>
Choose a menu item	<b>Return</b> , <b>Ctrl</b> <b>Return</b> , or <b>Enter</b>
Remove a menu, leaving the cursor on the menu name	<b>F11</b> (ESC)

\*The underlined character in the menu name

## Using Your Keyboard

### 12.4 Using the Keyboard Instead of the Mouse

To...	Press...
Move the cursor from the menu bar to where it was before you started using the menu bar (explicit focus policy), or	<b>F11</b> (ESC)
Move the cursor from the menu bar to wherever the pointer is located (implicit focus policy)	
Remove all displayed menus	<b>F10</b>

#### 12.4.3 Using Pop-Up Menus

To...	Press...
Display a pop-up menu	<b>F4</b>
Move to the next menu item in a pop-up menu	<b>↑</b> or <b>↓</b>
Display a submenu from a pop-up menu item	<b>→</b>
Choose a menu item	<b>Return</b> , <b>Ctrl</b> <b>Return</b> , or <b>Enter</b>
Remove the displayed menu	<b>F11</b> (ESC)
Dismiss the menu	<b>F4</b>

#### 12.4.4 Using Submenus

To...	Press...
Display a submenu	Any of these: Arrow key (in direction of submenu), <b>Ctrl</b> arrow key, <b>Return</b> , <b>Ctrl</b> <b>Return</b> , or <b>Enter</b>
Choose a menu item	<b>Return</b> , <b>Ctrl</b> <b>Return</b> , or <b>Enter</b>
Choose the default entry in a submenu	<b>Alt</b> <i><u>mnemonic</u></i> *
Move to another menu item in a submenu	<b>↑</b> or <b>↓</b>
Remove the submenu and move back to the parent menu	<b>←</b>
From the submenu to the parent menu	<b>←</b> , <b>Ctrl</b> <b>←</b> , or <b>Ctrl</b> <b>↑</b>
Move from the parent menu to the default menu item in the associated submenu	<b>→</b> , <b>Ctrl</b> <b>→</b> , or <b>Ctrl</b> <b>↓</b>

\*The underlined character in the menu name



## Using Your Keyboard

### 12.4 Using the Keyboard Instead of the Mouse

#### 12.4.5 Navigating Windows

This section describes how to use your keyboard to move between and within windows.

##### Moving Between Windows

To move between groups of windows:

To move...	Press...
From one group of windows to another	<b>Alt</b> <b>Tab</b> or <b>Alt</b> <b>F11</b> *
From one minimized window to another when the minimized windows are not in an icon box	<b>Alt</b> <b>Tab</b> or <b>Alt</b> <b>F11</b> *
From one minimized window to another in an icon box	Arrow keys
Within a group of windows	<b>Alt</b> <b>F6</b>
To the previous group of windows	<b>Alt</b> <b>Shift</b> <b>F11</b> or <b>Alt</b> <b>Shift</b> <b>Tab</b>
To move between minimized windows in an icon box	Arrow keys

\*If you use the mouse pointer to make windows active (Section 5.3), you cannot use the **Alt** **Tab** or **Alt** **F11** functions.

#### 12.4.6 Miscellaneous

To ...	Press...
Pop up the window menu of a minimized window when that window is in an icon box.	<b>F4</b>
Restore a minimized icon box	<b>Alt</b> <b>F5</b> or <b>Return</b>

##### Moving Within Windows

To move within menus:

To ...	Press...
Focus on the menu bar	<b>F10</b>
Pull down the window menu	<b>Alt</b> +space bar or <b>Shift</b> <b>F11</b>
Move from one tab group to another	<b>Tab</b>

To choose items in the window menu:

## Using Your Keyboard

### 12.4 Using the Keyboard Instead of the Mouse

To ...	Press...
Lower a window to the bottom of the window stack	<b>Alt</b> <b>F3</b>
Close (not minimize) a window	<b>Alt</b> <b>F4</b>
Restore a minimized window	<b>Alt</b> <b>F5</b>
Move a window	<b>Alt</b> <b>F7</b>
Size a window	<b>Alt</b> <b>F8</b>
Minimize a window	<b>Alt</b> <b>F9</b>
Maximize a window	<b>Alt</b> <b>F10</b>

To move a window around the screen:

1. Press **Alt** **F7**.
2. Use the arrow keys to move the window in the desired direction. You can also press **Ctrl** + arrow keys to move the window several pixels at a time.
3. Press **Return** or **Ctrl** **Return** to finish the operation.

To size a window:

1. Press **Alt** **F8**.
2. Press one arrow key to indicate which side of the window to size. For example, press **↑** for the top of the window.  
You can also press two arrow keys in a row to indicate which corner to size. For example, press **↑** **←** to indicate the upper-left corner.
3. Press the arrow keys to size the window in the desired direction. You can also press **Ctrl** arrow keys to size the window several pixels at a time.
4. Press **Return** or **Ctrl** **Return** to finish the operation.

#### 12.4.7 Using Dialog Boxes

To move...	Press...
Forward from tab group to tab group (field to field)	<b>Tab</b> or <b>Ctrl</b> <b>Tab</b>
Backward from tab group to tab group	<b>Shift</b> <b>Tab</b> or <b>Ctrl</b> <b>Shift</b> <b>Tab</b>
From button to button in a tab group	Arrow keys

## Using Your Keyboard

### 12.4 Using the Keyboard Instead of the Mouse

To move...	Press...
To a pop-up Options menu	<b>Select</b> , space bar, or <b>Ctrl</b> +space bar

To activate...	Press...
The default selection in the dialog box	<b>Return</b> , <b>Ctrl</b> <b>Return</b> , or <b>Enter</b>
A check or radio button in a group	<b>Select</b> , space bar, or <b>Ctrl</b> +space bar
A push button in a group	<b>Select</b> , space bar, <b>Ctrl</b> +space bar, <b>Return</b>
A push button in a group	<b>Ctrl</b> <b>Return</b> or <b>Enter</b>
An item in an Options menu	<b>Return</b> , <b>Ctrl</b> <b>Return</b> , or <b>Enter</b>

To cancel...	Press...
A dialog box or an Options menu	<b>Alt</b> <b>F4</b>

## 12.5 Typing Additional Characters

The terminal lets you type more characters than appear on your keyboard. For example, you can type accented characters or a © symbol. This chapter lists the available characters and shows you how to select them.

To enter one of these characters, you type a sequence of keys. Most sequences begin with one of the **Compose Character** keys. If you use the German keyboard, you use the **Group Shift** key instead of **Compose Character**.

This chapter describes the following types of key sequences:

- Three-stroke **Compose Character** sequences (with all LK401 keyboards)
- **Group Shift** sequences (with the German keyboard)
- Two-stroke key sequences (with keyboards that have nonspacing diacritical keys)
- Hexadecimal key sequences (for programmers)

Two basic factors determine the key sequences you can use.

- The Keyboard Type setting, which should match your keyboard type (Section 6.3).
- The character set the terminal is currently using (Chapter 8).



### 12.5.1 What Characters Can I Type?

You can type any of the characters in the character set the terminal is currently using. You can select from two 8-bit multinational sets (DEC Multinational or ISO Latin Alphabet No. 1) or many 7-bit national replacement character sets (NRCs).

To choose ...	Use...
The use of 8-bit multinational sets or 7-bit NRC sets	The VXT DECterm General Options dialog box (Section 8.5).
An 8-bit multinational set	The VXT DECterm General Options dialog box.
A 7-bit NRC set	The 7-Bit NRCS Selection dialog box (Section 8.7).

By default, the terminal uses the DEC Multinational character set. Section 8.5 describes multinational and national character sets.

### 12.5.2 Key Sequences with Nonspacing Diacritical Keys

Table 12-2 lists the keyboards that have keys with *diacritical marks*.

Table 12-3 lists all the additional characters for all character sets in the terminal. Many of these characters include a diacritical mark. For example, Á includes an acute accent.

To enter a character that has a diacritical mark, you press the diacritical key followed by the character. If your keyboard does not have the diacritical key, you must press the Compose Character key followed by the correct key sequence listed in Table 12-3.

To use diacritical keys, you must be using a multinational character set.

## Using Your Keyboard

### 12.5 Typing Additional Characters

**Table 12–2 Keyboards with Diacritical Marks**

Keyboard	Grave Accent	Acute Accent	Circumflex Accent	Tilde Mark	Umlaut
Finnish	yes	no	yes	yes	no
Flemish	yes	no	yes	yes	yes
French/Belgian	yes	no	yes	yes	yes
French Canadian	yes	no	yes	yes	no
German	yes	yes	yes	yes	yes
Portuguese	no	no	no	yes	no
Spanish	yes	yes	yes	yes	yes
Swedish	yes	no	yes	yes	no
Swiss (French)	yes	no	yes	yes	yes
Swiss (German)	yes	no	yes	yes	yes

#### 12.5.3 How to Type a Character Using the Compose Character Key

To enter a Compose Character key sequence:

1. Find the character you want to type in Table 12–3.
2. Press the Compose Character key.
3. Type the sequence in Table 12–3 for the character you want.

##### Example

To type an é:

1. Find the é character in Table 12–3.
2. Press Compose Character.
3. Type e and ' (apostrophe).

---

##### Note

If you try to enter a character that is not available in the current character set, a warning bell sounds. See Section 12.5.5.

---

### 12.5.4 How to Type a Character Using the Group Shift Key

If you select the Austrian-German keyboard type in the Customize Keyboard dialog box (Chapter 6), the **Group Shift** key replaces the **Compose Character** key.

Many keys on the German keyboard have a second group of legends on the right half of their keycap. These legends are called Group-2.

#### To enter a single character from Group-2:

1. Press and release the **Group Shift** key.
2. Type the key that has the desired character on the right half of the keycap. The character appears on the screen.

#### Example

To type an ø:

1. Press **Group Shift**.
2. Type the key that has the ø character on the right half of the keycap: **Ö ø**.

#### To enter a series of characters from Group-2:

1. Hold down the **Group Shift** key.
2. Type the series of keys that have the desired characters on the right half of their keycaps. The characters appear on the screen.
3. When you are done typing characters from Group-2, release the **Group Shift** key.

### 12.5.5 Invalid Sequences

When you complete a valid compose or group-shift sequence, the character appears on the screen. If you use an invalid sequence, the terminal cancels the sequence and sounds the warning bell.

Some compose characters require that you type the key sequence in the order listed in Table 12-3. If you do not follow the order, the sequence is invalid and the warning bell sounds. If the terminal does not display the character, repeat the sequence exactly as shown in Table 12-3.

---

#### Note

---

Pressing a function key cancels a compose or group-shift sequence without sounding the bell.

You can turn the warning bell on or off from the Customize Keyboard dialog box (Chapter 6).

---



## Using Your Keyboard

### 12.5 Typing Additional Characters

#### 12.5.6 Canceling or Restarting a Key Sequence

If you accidentally start a key sequence by pressing **Compose Character**, **Group Shift**, or a nonspacing diacritical key, press the **<X>** key. This immediately cancels the sequence.

If you press **Compose Character** during a compose sequence, a new three-stroke sequence starts from that point. The first sequence is canceled.

If you press any of the following keys during a key sequence, they cancel the sequence and perform their usual function:

- **Tab**
- Any top-row key
- **Enter**
- Any **Ctrl** *other key* combination

#### 12.5.7 Hexadecimal Key Sequences

This feature is primarily for programmers who are familiar with character coding and hexadecimal representation.

The terminal uses coded character sets to exchange data with a host computer. The code for a character can be represented by a pair of hexadecimal digits.

You can enter any 8-bit code from the terminal, by pressing **Compose Character** or **Group Shift** then entering two hexadecimal digits on the numeric keypad.

When you press **Compose Character** or **Group Shift**, the terminal assigns hexadecimal values to the numeric keypad keys. Here are the values assigned to each key:

PF1	PF2	PF3	PF4
7	8	9	—
4	5	6	'
1	2	3	Enter
0		*	

Key Name	Hexadecimal Digit
PF1	A
PF2	B
PF3	C
PF4	D
Minus (—)	E
Comma (,)	F

---

**Note**

---

The 8-Bit Multinational Characters, 7-Bit NRCS Characters, and UPSS DEC Supplemental buttons in the VXT DECterm General Options dialog box do not affect hexadecimal compose sequences.

---

**Examples**

- You can use a hexadecimal compose sequence to send the US (unit separator) control character. The hexadecimal value for US is 1F.
  1. Press Compose Character or Group Shift.
  2. Press 1 on the numeric keypad.
  3. Press , on the numeric keypad.
- You can use a hexadecimal compose sequence to send the DCS (device control string) character. The hexadecimal value for DCS is 90.
  1. Press Compose Character or Group Shift.
  2. Press 9 on the numeric keypad.
  3. Press 0 on the numeric keypad.

**Invalid Hexadecimal Sequences**

If you enter an invalid sequence, the terminal cancels the sequence and sounds the warning bell. You can turn the warning bell on or off from the Customize Keyboard dialog box (Chapter 6).

## Using Your Keyboard

### 12.5 Typing Additional Characters

**Table 12-3 Key Sequences for Additional Characters**

Character	Sequence
"	quotation mark    " (sp)
#	number sign        + +
'	apostrophe         ` (sp)
@	commercial at      A A
[	opening bracket    ( (
\	backslash           / / or / <
]	closing bracket    ) )
^	circumflex accent   ^ (sp)
`	grave accent       ` (sp)
{	opening brace       ( -
	vertical line        / ^
}	closing brace       ) -
~	tilde                ~ (sp)
¡	inverted !          !!
¢	cent sign           C / or C
£	pound sign          L- or L=
¥	yen sign            Y- or Y=
§	section sign        SO or S! or S0
¤	currency sign       XO or X0
©	copyright sign      CO or C0
ª	feminine ordinal    A_
«	open angle brackets < <
°	degree sign         0 ^
±	plus or minus sign   + -
²	superscript 2       2 ^
³	superscript 3       3 ^
µ	micro sign           / U
¶	paragraph sign      P!
·	middle dot           . ^

(continued on next page)



## Using Your Keyboard

### 12.5 Typing Additional Characters

**Table 12-3 (Cont.) Key Sequences for Additional Characters**

Character		Sequence
<sup>1</sup>	superscript 1	1 ^
º	masculine ordinal	O _
»	closed angle brackets	>>
¼	fraction one- quarter	1 4
½	fraction one-half	1 2
¿	inverted ?	??
À	A grave	`A
Á	A acute	'A
Â	A circumflex	^A
Ã	A tilde	~A
Ä	A umlaut	"A or "A
Å	A ring	°A or *A
		(degree sign)
Æ	A E diphthong	AE
Ç	C cedilla	C,
È	E grave	`E
É	E acute	'E
Ê	E circumflex	^E
Ë	E umlaut	"E or "E
Ì	I grave	`I
Í	I acute	'I
Î	I circumflex	^I
Ï	I umlaut	"I or "I
Ñ	N tilde	~ N
Ò	O grave	`O
Ó	O acute	'O

Most sequences that include diacritical marks can also be typed in reverse order.

(continued on next page)

## Using Your Keyboard

### 12.5 Typing Additional Characters

**Table 12-3 (Cont.) Key Sequences for Additional Characters**

Character	Sequence
Ô O circumflex	^O
Õ O tilde	~O
Ö O umlaut	"O or "O
Œ O E diphthong*	O E
Ø O slash	o /
Ù U grave	`U
Ú U acute	'U
Û U circumflex	^U
Ü U umlaut	"U or "U
ÿ Y umlaut*	"Y or "Y
ß German small sharp s	ss
à a grave	`a
á a acute	'a
â a circumflex	^a
ã a tilde	~a
ä a umlaut	"a or "a
å a ring	°a or a*
	(degree sign)
æ a e diphthong	a e
ç c cedilla	c , (comma)
è e grave	`e
é e acute	'e
ê e circumflex	^e
ë e umlaut	"e or "e
ì i grave	`i
í i acute	'i
î i circumflex	^i

\*This character is only available when you use the DEC Multinational character set. See the VXT DECterm General Options dialog box (Section 8.5).

(continued on next page)

## Using Your Keyboard

### 12.5 Typing Additional Characters

**Table 12-3 (Cont.) Key Sequences for Additional Characters**

Character		Sequence
ï	i umlaut	"i or "i
ñ	n tilde	~n
ò	o grave	`o
ó	o acute	'o
ô	o circumflex	^o
õ	o tilde	~o
ö	o umlaut	"o or "o
œ	o e diphthong*	o e
ø	o slash	o /
ù	u grave	`u
ú	u acute	'u
û	u circumflex	^u
ü	u umlaut	"u or "u
ÿ	y umlaut*	"y or "y

\*This character is only available when you use the DEC Multinational character set. See the VXT DECterm General Options dialog box (Section 8.5).

(continued on next page)



## Using Your Keyboard

### 12.5 Typing Additional Characters

**Table 12–3 (Cont.) Key Sequences for Additional Characters**

Character	Sequence
<b>ISO Characters†</b>	
no break space	sp sp
broken vertical bar	or ! ^
logical not	- ,
soft (syllable) hyphen	- -
® registered trade- mark	R O
macron	- ^
¾ three quarters	3 4
÷ division sign	- :
× multiplication sign	x x
acute accent	' '
cedilla	, ,
diaeresis	"" (sp) or " "
Ý Y acute	' Y
ý y acute	' y
Ð capital Icelandic thorn	T H
þ small Icelandic thorn	t h
Ð capital Icelandic Eth	- D
ð small Icelandic Eth	- d

---

†These characters are only available when you use the ISO Latin Alphabet No. 1 character set. See the VXT DECterm General Options dialog box (Section 8.5).

---



# A

## Solving Problems And Getting Service

This appendix describes some simple operating problems you can solve yourself. The appendix covers the following major topics:

- Operating Problems
- Power-Up Self-Test
- Digital Service Overview

### A.1 Operating Problems

Table A-1 lists some possible operating problems and suggested solutions. If you have a problem with your terminal, check this list before calling for service. If the problem persists and you need service, see Section A.4 in this appendix.

**Table A-1 Operating Problems**

Symptom	Suggested Solution
<b>System Box Problems</b>	
The system box fan is off.	Check the power source. Make sure the power cord is plugged in. Turn the system box's power switch on (   ). Note: The VX225 and VX227 terminals do not have a system box.

(continued on next page)

## Solving Problems and Getting Service

### A.1 Operating Problems

**Table A-1 (Cont.) Operating Problems**

Symptom	Suggested Solution
<b>Monitor Problems</b>	
When you turn the terminal on, the monitor does not display the Terminal Manager window after 45 seconds.	<p>Turn the monitor's power switch on (   ).</p> <p>System box models: Check the monitor cable connections at the system box and monitor.</p> <p>Adjust the monitor's brightness and contrast controls. See the monitor's installation guide.</p> <p>If you have a VRM17 monitor, set the scan switch to High.</p> <p>If you have customized the terminal to hide the Terminal Manager window at startup, you can press <b>F3</b> to redisplay the Terminal Manager window.</p> <p>If you have customized the terminal to not run the terminal manager, you can start the Terminal Manager window from the VXT Create pop-up menu. Press MB2 anywhere on the screen background to display the menu.</p> <p>Check the keyboard cable connections at the terminal and keyboard</p>
The screen is blank, but the terminal is on.	<p>Check if the two keyboard lights are blinking, which may indicate the CRT saver is on. If the CRT saver is on, press any key to reactivate the screen.</p> <p>Check if brightness and contrast controls are set correctly.</p>
System box models: On a color terminal, the window colors look wrong. The red and blue colors appear to be swapped.	<p>Check the monitor's cable connection at the back of the system box. The cable may be plugged in upside down.</p>

(continued on next page)



## Solving Problems and Getting Service

### A.1 Operating Problems

**Table A-1 (Cont.) Operating Problems**

Symptom	Suggested Solution
<b>Booting Problems or Operating Failure</b>	
The monitor displays a >>> prompt.	<p>The &gt;&gt;&gt; prompt appears when the terminal fails operation or when you halt the terminal (by pressing the halt button, or by pressing <b>Ctrl</b> <b>C</b> before the terminal boots its VXT software).</p> <p>Turn the terminal's <b>IO</b> power switch off (O) and on ( I ) again. (On system box models, this is the switch on the system box.)</p> <p>If the terminal fails to load its software or fails operation again, keep notes of any error messages and the terminal's operating state when the failure occurred. For host-based terminals, see Section 1.5.1 to monitor memory use.</p> <p>You can also enter boot commands at the &gt;&gt;&gt; prompt, to load a specific version of VXT software (Section 7.6.5).</p> <p>If you cannot correct the problem, call your Digital Service representative with any error messages you noted.</p>

(continued on next page)

## Solving Problems and Getting Service

### A.1 Operating Problems

**Table A-1 (Cont.) Operating Problems**

Symptom	Suggested Solution
<b>Server-Based Terminals: Problems with Server Connections</b>	
The first time you start the terminal, it fails to load its VXT software from an InfoServer system and displays the following message four times:  LASTport... Group code 0	The terminal does not have the same LASTport group code as the InfoServer system. See your system manager for the correct code. See Section 7.2.3 to enter a LASTport code.
The terminal stops operating correctly and displays a message on the top line of the screen.	The terminal may have lost its connection to the InfoServer system. Wait for the connection to be reestablished. When the connection resumes, the message is erased, the screen is restored, and the terminal returns to normal functions.  Contact your system manager if these messages appear too frequently or for longer than a few seconds. If the terminal does not recover, turn the terminal's <input type="checkbox"/> <input type="checkbox"/> power switch off (O) and on ( I ) again to restart the terminal. On system box models, this is the switch on the system box.
The terminal's software seems to be hanging in a suspended state.	Reboot the terminal by pressing the following key sequence: <b>ANSI keyboard</b> - Press <input type="checkbox"/> +left <input type="checkbox"/> +keypad <input type="checkbox"/> . <b>PC keyboard</b> - Press <input type="checkbox"/> + <input type="checkbox"/> +keypad <input type="checkbox"/> . <b>Short ANSI keyboard</b> - Press <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> .

(continued on next page)

## Solving Problems and Getting Service

### A.1 Operating Problems

**Table A-1 (Cont.) Operating Problems**

Symptom	Suggested Solution
<b>Problems Creating Sessions and VXT Applications</b>	
You cannot view the Terminal Manager window.	<p>If you have customized the terminal to hide the Terminal Manager window, you can press <b>F3</b> to redisplay the Terminal Manager window.</p> <p>If you have customized the terminal to not run the terminal manager, you can start the Terminal Manager window from the VXT Create pop-up menu. Press MB2 anywhere on the screen background to display the menu.</p>
You cannot create sessions with the TCP/IP transport in the Create dialog box. The TCP/IP button is dimmed.	<p>Make sure your terminal's IP address is entered in the Customize TCP/IP dialog box and appears at the bottom of the Terminal Manager window. See Section 7.2.4.</p> <p>Also, your system manager may have restricted access to the Create menu settings by using the terminal's configuration manager. Ask your system manager which of your terminal's create and customize features are restricted.</p>
You cannot use the DECnet transport to create sessions in the Create dialog box. The DECnet button is dimmed.	<p>Make sure your terminal's DECnet address is entered in the Customize DECnet dialog box and appears at the bottom of the Terminal Manager window. See Section 7.2.7.</p> <p>Also, your system manager may have restricted access to the Create menu settings by using the terminal's configuration manager. Ask your system manager which of your terminal's create and customize features are restricted.</p>
You cannot create a DECnet X session to an OpenVMS host from the Create dialog box.	<p>Make sure your system manager installed the network object VXT\$SERVER.COM on the OpenVMS host. See <i>VXT Software Version 2.0 Installation and System Management</i>.</p>
<b>Problems with Customize Dialog Boxes</b>	
You cannot change settings in Customize dialog boxes.	<p>Your system manager may have restricted access to some Customize dialog boxes by using the terminal's configuration manager. Ask your system manager which of your terminal's customize features are restricted.</p> <p>Some buttons are dimmed if they do not apply to the action you are currently performing.</p>

(continued on next page)



## Solving Problems and Getting Service

### A.1 Operating Problems

**Table A-1 (Cont.) Operating Problems**

Symptom	Suggested Solution
<b>Mouse Problems</b>	
The pointer for the mouse or tablet does not appear on the screen, or the pointer does not respond to the pointing device commands.	<p>Turn the system box's <input type="checkbox"/> power switch off (O), then disconnect and reconnect the mouse or tablet cable. Turn the system box's <input type="checkbox"/> power switch on ( I ).</p> <p>Replace the mouse. Until you get a new mouse, press <input type="button" value="Ctrl"/> <input type="button" value="Shift"/> <input type="button" value="F3"/> to use the editing keypad to perform mouse functions. See Chapter 12.</p>
<b>VXT DECterm Window Problems</b>	
The DECterm window is too high on the screen.	Adjust the terminal size in the DECterm Window Options dialog box. You can also use the window menu to move the window. To display the menu, click MB3 anywhere on the window frame.
<b>Keyboard Problems</b>	
The bell tone does not sound when you turn the terminal on. All keyboard indicator lights are off.	Check the keyboard cable connection to the system box.
The information you type is not displayed.	<p>Check the hold indicator to see if the keyboard is on hold. If the keyboard is on hold, press the <input type="button" value="F1"/> (Hold) key to release the screen.</p> <p>The current window may not accept input, or you may not have activated the window. Check the window's title bar to see if the window has input focus.</p>
<b>Printer Problems</b>	
The printer does not print.	<p>Turn the printer's power switch on ( I ).</p> <p>Check the printer cable connections.</p> <p>Check the settings in the Customize Serial and Parallel Ports dialog box (Section 7.2.1). Check that the correct port is enabled (serial or parallel). Check that the transmit rate, baud rate, and parity setting in the dialog box match the printer's settings.</p>

(continued on next page)

**Table A-1 (Cont.) Operating Problems**

Symptom	Suggested Solution
<b>Network Problems</b>	
The host system and terminal do not communicate.	<p>Check that the Ethernet cable is securely connected to the terminal.</p> <p>Make sure the port that your system cable is connected to is active by trying a working system in the port.</p> <p>If you are using a ThinWire Ethernet cable, make sure the cable is attached to the system box by a T-connector. Make sure there is no ThinWire segment between the system box and the T-connector. Check if a terminator has been removed or is connected to an active ThinWire segment.</p>
Server-based terminals: the InfoServer system displays messages at the top of the terminal's screen.	<p>Communication between the InfoServer system and terminal may have been interrupted. Wait to see if the InfoServer system can reconnect to the terminal.</p> <p>If normal operation does not resume, you may need to reboot the terminal by pressing <b>Ctrl</b>+left <b>Alt</b>+keypad <b>.</b>.</p>

## **A.2 Power-Up Self-Test**

Every time you turn the terminal on, it automatically runs a power-up self-test. This test checks the operating status of many internal parts in the terminal. During the test, the keyboard lights turn on and off. The power-up self-test should not take more than 45 seconds to complete.

### **If the test is successful:**

The terminal downloads the VXT system image software, performs its boot procedure, and displays the Terminal Manager window or a log-in prompt for your host system.

### **If there were any test errors:**

The terminal displays a diagnostic error message.

### **A.2.1 Error Messages**

If the terminal fails the power-up self-test, the terminal may display an error message and >>> prompt. The following table lists error messages for some simple problems that you can correct yourself. If you see other error messages, note the error messages and call your Digital service representative; only qualified service personnel should try to correct these problems.

## Solving Problems and Getting Service

### A.2 Power-Up Self-Test

Error Message	Reason
?? 003 3 QDZ 0096	The mouse failed the self-test. Check that the mouse is plugged in correctly.
?? 002 3 QDZ 0080	The keyboard failed the self-test. Check that the keyboard is plugged in correctly.
?? 001 9 VNI 0132	The Ethernet failed the self-test. Check that your network cable is plugged in correctly.
?? 020 12 IMG 0016	The image accelerator option board failed the self-test. Check that the board is installed correctly. For VXT 2000 system box models, see <i>VXT 2000 Windowing Terminal Installation Information</i> . For other models, see instructions supplied with the image accelerator board.
?MOP 1	Transmit error. MOP was unable to transmit due to a system board error.
?MOP 255	Not enough space in memory to load the image.
?IP 2	An ICMP Protocol Unreachable message was received. The TFTP host listed in the BOOTP response does not understand the user datagram protocol (UDP) that TFTP runs over. The IP download stops.
?IP 3	An ICMP Port Unreachable message was received. The remote TFTP daemon has either never been started or is not running on the load host. The IP download stops.
?TFTP 1	A TFTP error message was received while sending a TFTP Read Request packet. The TFTP load stops. This error usually means a file was not found or you do not have access to the file.
?TFTP 3	A TFTP error message was received while sending a TFTP Acknowledgment packet. The TFTP load stops.
?TFTP 5	A TFTP error message was received while sending a TFTP Error packet. The TFTP load stops.
?TFTP 255	Not enough space in memory to load the image.

### A.3 Restoring the Terminal to Factory-Default Settings

You can reset the VXT 2000 windowing terminal's nonvolatile RAM (NVRAM) to the factory-default settings by entering a console command.

1. Place the terminal in console mode by pressing **Ctrl** **Alt** keypad **.** or pressing the halt button on the rear of the terminal.
2. At the >>> console prompt, enter the following command:

```
>>> T/UTIL 1
```



## Solving Problems and Getting Service

### A.3 Restoring the Terminal to Factory-Default Settings

When you boot the terminal successfully it saves a record of the successful booting method used. When you reboot the terminal, it tries using this saved method first. You can clear this saved state while booting the terminal:

```
>>> B/10000
```

## A.4 Digital Service Overview

As a full-service vendor, Digital provides hardware, software, network, and operations support to a diverse, worldwide customer base. Digital offers one of the most comprehensive portfolios of service in the industry, designed to support customers throughout the computing life cycle—planning, design, implementation and ongoing management.

Customers tailor the type and level of support to meet their individual business needs. Regardless of the service solution, customers benefit from Digital's single-source support strategy.

Digital's commitment to be the Best in Class service provider means that there is a force of 40,000 service professionals operating from 450 locations in over 80 countries dedicated to support our customers.

Digital believes in backing its products with meaningful warranties. This product may be covered by the Standard Product Warranty, which is entitlement to one year of hardware Basic Service with priority response time Monday through Friday, 8 AM to 5 PM. Where applicable, entitlement to the Product Foundation Warranty for the kernel software is provided. This Standard Warranty is further proof of Digital's commitment to the customer.

Digital provides on-site and off-site remedial services.

Digital offers fast, competitively priced, quality maintenance performed at your site by Digital trained Service Specialists. There are several on-site services available.

### A.4.1 How to Get Service

Digital has a central service center in your area to help you keep your system running at peak efficiency. To find out more about Digital's hardware and software service offerings

#### **In the United States**

For customers who purchased standard warranty (on-site) support, have your system manager call for remedial service at 1-800-354-9000.

Other customers may call 1-800-225-5385 for return to Digital Service.

For general information, call 1-800-DEC-INFO.

## **Solving Problems and Getting Service**

### **A.4 Digital Service Overview**

For ordering and ordering support, call 1-800-DIGITAL.

#### **Outside the United States**

Contact your local Digital Customer Services Office.



# B

## Mixing Colors

This appendix describes how to use the Color Mixing dialog box on VXT 2000 color and gray scale terminals. You can choose and mix your own colors for windows, window borders, and certain other customizable features. When you choose a feature that has customizable colors, the terminal displays a Color Mixing dialog box.

The VXT 2000 color and gray scale terminals use 8-plane displays. The color terminal lets you display 256 colors from a palette of 16.7 million colors. The gray scale terminals provide 256 levels of gray.

### B.1 What Color Settings Can I Customize?

Here is a list of VXT 2000 color settings you can change, using the Terminal Manager window and workspace Options submenu.

To change this feature's color...	Use this dialog box...
<b>Terminal Manager (Customize Menu)</b>	
Pointer	Customize Pointer
Window	Customize Window Color
Screen	Customize Screen Background



## Color Mixing

### B.1 What Color Settings Can I Customize?

To change this feature's color...	Use this dialog box...
<b>Window Manager (Workspace Options Submenu)</b>	
Border for active windows	Border Color Options
Border for inactive windows	Border Color Options
Window manager menu colors	Border Color Options
Icons	Icon Color Options
Window matte	Matte Options

### B.2 Color Mixing Dialog Box

The Color Mixing dialog box offers different methods for mixing colors, based on different color models:

- Picker
- Hue, Lightness, Saturation (HLS)
- Red, Green, Blue (RGB)
- Browser
- Gray scale

The default model is the Picker model. You can use one model or a combination of models. For example, you can use any color model to select a color, then use the Picker color model to blend the selected color. When you choose a color model in the dialog box, the terminal displays the set of controls for that model in the dialog box.

The following sections describe how to use each of the color models to choose your own colors.

#### B.2.1 Picker Color Model

When you click on a button in a dialog box to change a color, the terminal displays the Picker version of the Color Mixing dialog box:

---

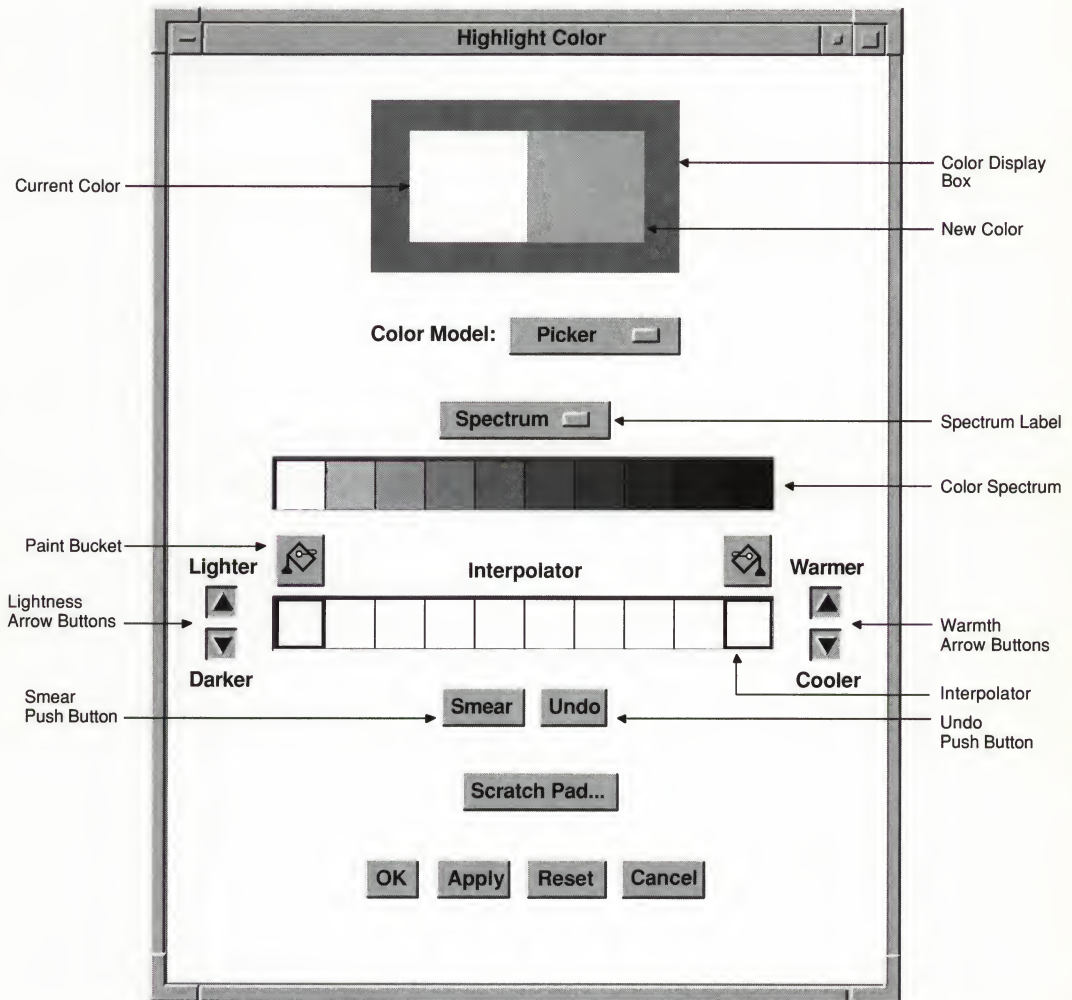
#### Note

---

The title of the dialog box may be Color Mixing or Highlight Color, depending on what feature you are customizing.

---

## Color Mixing B.2 Color Mixing Dialog Box



LJ-03030-RAGS

The **color spectrum** is a static collection of colors. The spectrum options menu lets you set the spectrum to one of the following common color palettes:

- Rainbow spectrum (white, red, orange, yellow, green, blue, blue-violet, violet, brown and black)
- Pastels
- Vivids

## Color Mixing

### B.2 Color Mixing Dialog Box

- Earthtones
- Any application-specific palettes

When you click MB1 on a spectrum tile or interpolator tile, that color becomes the new color. The tile is highlighted to identify it as the currently selected color.

You can use the selected color without modification, or you can do on or more of the following tasks:

- Use the interpolator to smear (blend) the selected color into various shades.
- Use the arrow buttons to make the color lighter or darker, warmer or cooler.
- Switch to another color model and use the features of that model to modify the current selection.

To smear colors, use the two **paint buckets** to load the **interpolator** with the colors:

1. Click MB1 on a spectrum tile or interpolator tile. The color display box displays the color of that tile.
2. Click on a paint bucket, which fills the interpolator end tile below it with the selected color.
3. Fill both interpolator end tiles or one. If you only fill one end tile, the color of the empty interpolator end tile is white.

As an alternative to the paint buckets, you can use an **eyedropper** pointer to load the interpolator. If you click and hold MB1 on a spectrum or interpolator tile, the pointer becomes an eyedropper filled with the color of the tile.

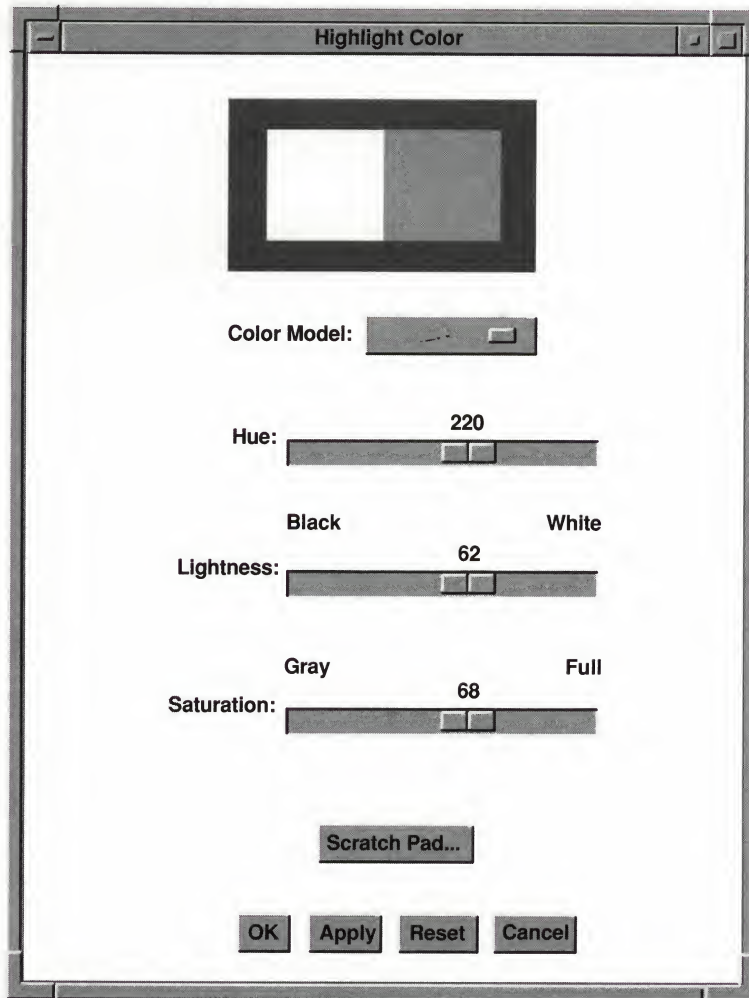
You can use the eyedropper to fill one of the interpolator's two end tiles, by moving the eyedropper to the tile and clicking on MB1. If you do not position the eyedropper directly on one of the two end tiles, the closest end tile is filled with the eyedropper color. The cursor must be inside the interpolator.

Use the Undo button to reverse the last interpolator action, which can be a smear, the filling of an end tile, or the activation of one of the warmth or lightness adjustment buttons.



### B.2.2 Hue, Lightness, Saturation (HLS) Color Model

When you choose HLS from the pop-up Color Model menu, the Color Mixing dialog box displays the controls for the HLS color model.



LJ-03027-RAGS

## Color Mixing

### B.2 Color Mixing Dialog Box

In the HLS color model, you specify a color by three characteristics: hue, lightness, and saturation.

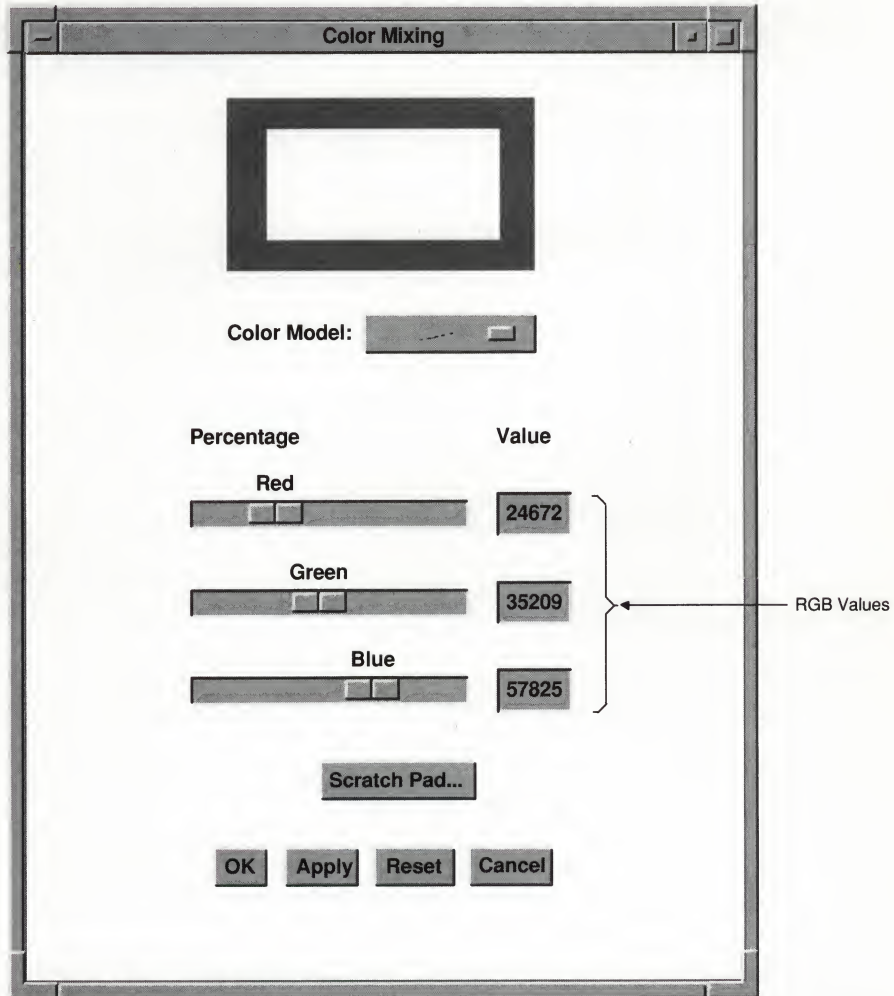
- Hue is color, such as red or blue.
- Lightness is color intensity, the amount of color.
- Saturation is the purity of the color, or how much the color is diluted by white.

The HLS color model contains three scales that represent the ranges of hue, lightness, and saturation.

### B.2.3 Red, Green, Blue (RGB) Color Model

In the RGB color model, you mix a color by adding different intensities of the primary colors red, green, and blue. A primary color is a basic color that cannot be created by mixing other colors.

The RGB color model contains three scales that represent the of red, green and blue.



LJ-03028-RAGS

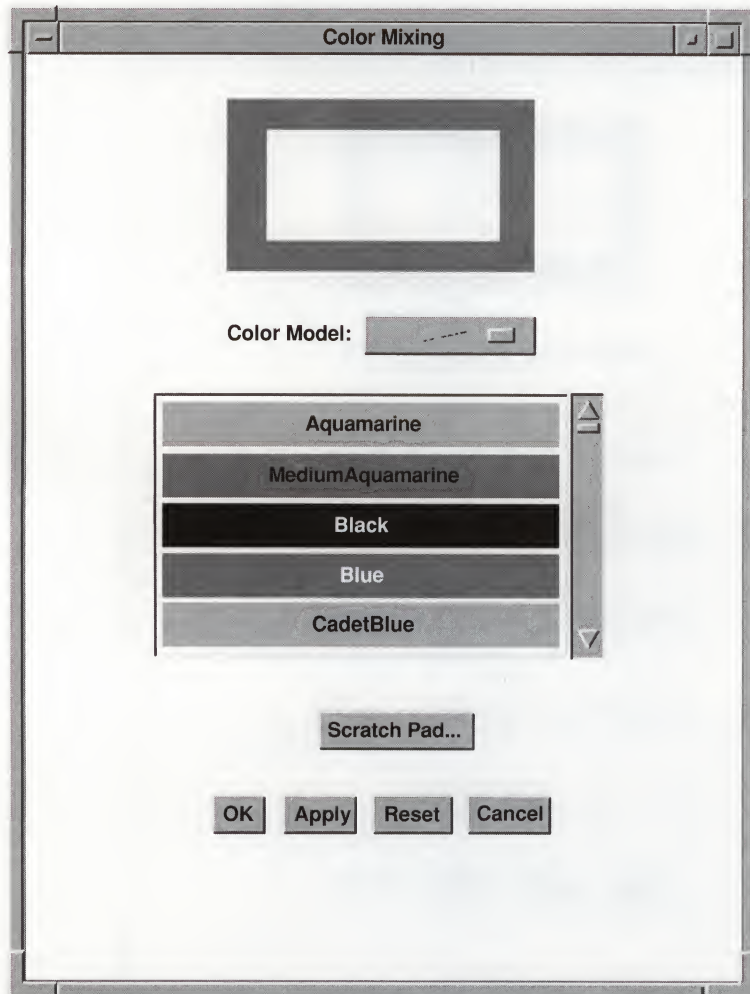


## Color Mixing

### B.2 Color Mixing Dialog Box

#### B.2.4 Browser Color Model

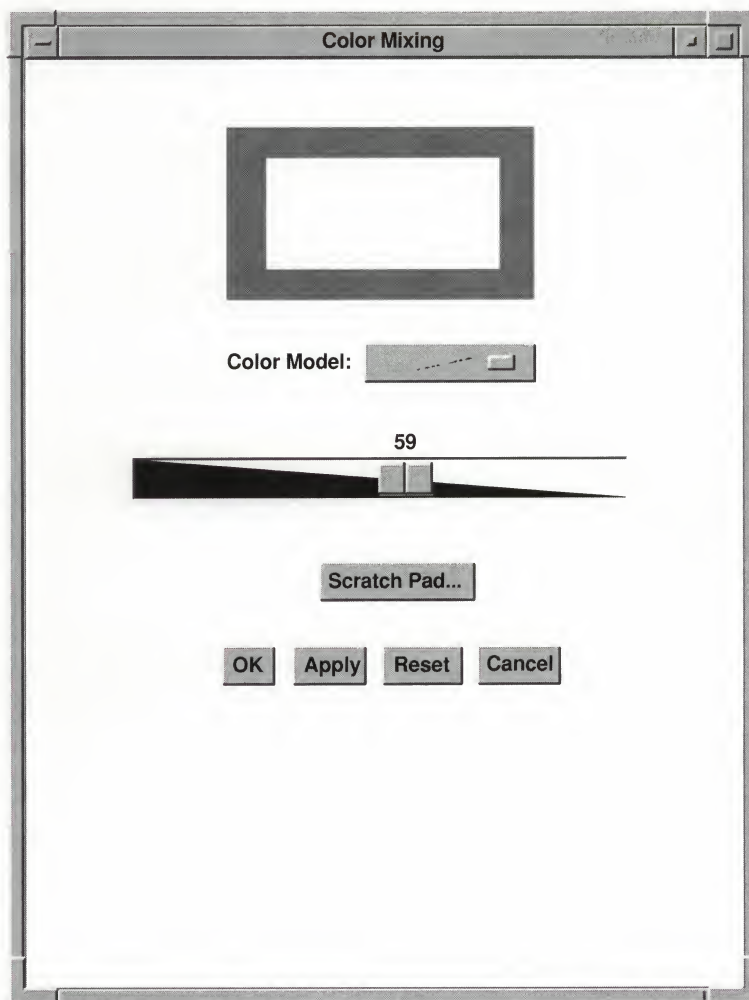
The browser color model is a scrolled window that displays a list of X11 named colors. Each button in the scrolled window shows the name of an X11 color. Use the scroll bar to scroll through this color list. When you click MB1 on a color in the list, the color display box becomes filled with that color. The color browser is available on all systems.



LJ-03029-RAGS

### **B.2.5 Grayscale**

The grayscale color model contains a scale that lets you mix gray shades ranging from black to white. Note that when you switch to the grayscale color model, the current new color becomes a shade of gray.



LJ-03031-RAGS

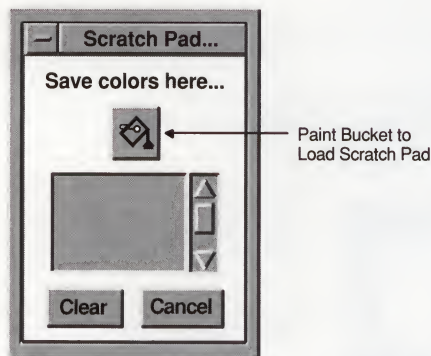
#### **Scratch Pad**

The scratch pad lets you store intermediate colors for later use in color mixing.

## Color Mixing

### B.2 Color Mixing Dialog Box

**To access the scratch pad,** click on the Scratch Pad button in any of the color models.



ZK-2577A-GE

**To store the currently selected color in the scratch pad,** click on the paint bucket above the scratch pad color tile. The scratch pad adds that color to its stored colors, which you can scroll through with the scroll bar.

**To clear the scratch pad list,** use the Clear button.

On the picker model, the currently selected color can be one of many color tiles. On other color models, you can select only the new and original color tiles.

To set the new color tile to a scratch pad, scroll to that color and click on the scratch pad color tile. The new color tile changes and the scratch pad tile becomes highlighted. If you are in the picker model, you now have the option to dump the highlighted scratch pad color into one of the interpolator end tiles by using the paint bucket buttons.



# C



## Programming with The X Windows Image Extension

This appendix is for programmers using X windows image extension (XIE) software for applications on the terminal. The appendix briefly covers the following topics:

- Checking the Terminal's Imaging Capabilities
- Hardware Accelerated XIE Functions
- XIE Pipeline Definitions
- XIE Pipeline Constraints
- XIE Pipeline Examples

The terminal includes the X windows image extension (XIE) to the X windows server. The terminal supports Version 3.0 of the XIE protocol. With XIE:

- The server can save resources by managing images in compressed form
- The server can manipulate the images while accepting user input from client-based application programs

The terminal supports all XIE protocol functions. Many VXT 2000 models have an optional image accelerator board available. You do not need the optional image accelerator board to use XIE functions, but the board accelerates certain bitonal XIE functions to help display images faster.

All full function VXT system images include XIE support. The VXT EX system image does not support XIE. To use XIE, make sure the X Image Extension button in the Customize Boot dialog box is on. See Section 7.6.

**For more information on XIE:** Appendix D lists some available documentation on XIE and Digital's image application toolkit products that support XIE, such as DECimage Application Services.

## **C.1 Checking the Terminal's Imaging Capabilities**

If the terminal is using a VXT software image that supports XIE, you can have your application use the following query to determine if the bitonal image accelerator is present:

```
status = XInternAtom(display, "_DEC_XIE_ACCEL_TYPE_A", True);
```

The presence of the `_DEC_XIE_ACCEL_TYPE_A` atom indicates that the bitonal image accelerator board is present in the terminal. This board accelerates the following functions:

- CCITT Group 3 and Group 4 image data decompression
- Scaling range from 1/64 to 64 times the original size
- Orthogonal rotation (0°, 90°, 180°, and 270°)
- Cropping
- Convolution using a 3×3 or 5×5 kernel, with kernel values between 0 and 255

## **C.2 Hardware Accelerated XIE Functions**

To take maximum advantage of the bitonal image accelerator, you must follow these general rules:

- Use the XIE pipeline method of processing to display images (instead of atomic XIE processing).
- Group all accelerated XIE functions together.
- Transport and work from compressed bitonal images whenever possible.

## **C.3 XIE Pipeline Definitions**

**Always use XIE pipelines to display images on the terminal.**

XIE uses process control services, known as **pipelines**, to allow a client to create and execute linear, macro-like assemblies of protocol requests. A pipeline is a single threaded list of XIE protocol functions through which image data flows sequentially.

When you construct pipelines for processing images in the terminal, use the following guidelines for the best image display performance:

- Group all accelerated XIE functions together. That is, do not mix nonaccelerated functions with accelerated functions. Accelerated XIE functions include crop, area-constrain, scale, rotate, and mirror.

- When using any accelerated functions, observe the following order: crop, area-constrain, scale, rotate, mirror.
- If you use the area function, it *must* be followed by the constrain function.
- Do not include more than one instance of an accelerated XIE function in the pipe. Do not use two scale functions in a single pipeline.
- End the pipeline with the export function.
- Do not use phototaps in the pipeline.

### C.3.1 XIE Pipeline Constraints

Some accelerated XIE functions have associated constraints, to ensure that the bitonal image accelerator option can handle the request. By following these constraints, you ensure that the hardware accelerator is used to process XIE requests, rather than the XIE software alone.

Following is a list of the hardware accelerated XIE constraints:

- The bitonal image accelerator supports CCITT Group 3 and Group 4 compressed image formats and Pulse Code Modulated (PCM) data. CCITT is the Comité Consultatif International de Télégraphique et Téléphonique, a standards committee for the communication industry in Europe.
- Specify kernel values in the area request as follows:
  - Each value must be between 0 and 255.
  - The kernel size must be either 3×3 or 5×5.
  - The sum of all values must be between 224 and 255.
- Specify the IDC parameter as null in an area request.
- Specify the parameters **op1** and **op2** as **mult** and **sum**, respectively, in the area request.
- Images may not be scaled to a size greater than 64 times or less than 1/64 of the original in the scale request.
- For data alignment purposes, the server may slightly adjust the output scanline length from that specified in the scale request. Any adjustment will be close to the specified scale, and will always be equal to or greater than the specified scale.
- Specify a rotation request of 0°, 90°, 180°, or 270° only.



## Programming with the X Windows Image Extension

### C.3 XIE Pipeline Definitions

- The constrain function immediately following the area function determines the number of levels for a given output pixel.
  - Specifying two levels in the constrain function produces a bitonal output on any display. In this case, the export function parameters (**lut\_id**, **colormap\_id**, **match**, and **grey**) should all be null in the export request.
  - In a gray scale or color system, specifying up to 256 levels in the constrain function produces a multibit output. In this case, the export function parameters **colormap\_id**, **match**, and **grey** should be null in the export request. The **lut\_id** parameter should be specified as a previously created server image resource.

Digital suggests that an application allocate a fixed number of gray scale colormap entries at initialization time and always use these entries to display the enhanced bitonal images. This is accomplished by allocating the colors (actually gray scales) from the default colormap, and creating a one-scanline image with these colormap entry pixel values to use as the **lut\_id** in all XIE export calls.

Digital recommends using from 8 to 32 gray scale values. Fewer values introduce artifacts in the displayed image, and more values are a waste of server resources. See the XIE documentation for details on creating a LUT image.

#### C.3.2 XIE Pipeline Examples

The following examples show sample pipelines that illustrate how functions are mapped either to the image accelerator board or to the XIE software routines. The examples illustrate the difference in image display performance when you program with the image accelerator board in mind.

##### 1. All Accelerated Functions (Best Performance)

Crop  
Area-Constrain  
Scale  
Rotate  
Mirror

In this pipeline, all XIE routines are mapped to the image accelerator board. Thus, this pipeline requires only one pass through the image accelerator board, resulting in the best image display performance.

##### 2. Interspersed Software Functions (Poorer Performance)

Crop  
Scale

## Programming with the X Windows Image Extension

### C.3 XIE Pipeline Definitions

Translate  
Rotate

In this pipeline, the Crop and Scale XIE routines are first mapped to the image accelerator board. The Translate routine is then mapped to the XIE software. Finally, the Rotate routine is mapped to the image accelerator board. Thus, this pipeline requires two passes through the image accelerator board, resulting in degraded image display performance.

# D



## Related Documentation

This document is part of your terminal's user documentation kit.

Document	Part Number
VXT 2000+/VXT 2000 User Documentation Kit	EK-VXT20-DK
VXT 2000 Windowing Terminal Installation Information	EK-VXT20-IN
VXT 2000+/VXT 2000 Windowing Terminal Getting Started	EK-VXT20-GS
VXT 2000+/VXT 2000 Windowing Terminal User Information	EK-VXT20-UG
VXT 2000+/VXT 2000 Windowing Terminal Release Notes	EK-VXT20-RN
VXT 2000 Model VX225 and VX227 User Documentation Kit	EK-VXT15-DK
VXT 2000 Model VX225 and VX227 Windowing Terminal Installation Information	EK-VXT15-IN
VXT 2000+/VXT 2000 Windowing Terminal Getting Started	EK-VXT20-GS
VXT 2000+/VXT 2000 Windowing Terminal User Information	EK-VXT20-UG
VXT 2000+/VXT 2000 Windowing Terminal Release Notes	EK-VXT20-RN

You can also order the following related documents from Digital. Check with your Digital sales representative for availability in your country.

Document	Part Number
VXT Software Version 2.0 Installation and System Management	AA-PJHFD-TE
VXT Software Version 2.0 Release Notes	AA-PKWSF-TE
VT320 Programmer Reference Manual	EK-VT320-RM
DECimage Application Services for VMS	
X Image Extension Programmer's Reference Manual	AA-PH7XA-TE



Document	Part Number
Image Display Services Programmer's Reference Manual	AA-LE73C-TE
Programmer's Overview	AA-LE65C-TE
ULTRIX DECwindows Motif User's Guide	AA-MA87B-TE
VMS DECwindows Motif User's Guide	AA-PGZ5A-TE

## D.1 Ordering Information

You can order options and documentation by mail, phone, or electronically.

### Need Help?

If you need help deciding which documentation best meets your needs, please call 800-DIGITAL (800-344-4825) and press 2 for technical assistance.

### Electronic Orders

To place an order through your account at the Electronic Store, dial 800-234-1998, using a modem set to 2400 or 9600 baud. You must be using a VT terminal or terminal emulator set at 8 bits, no parity. If you need help, call 800-DIGITAL (800-344-4825) and ask for an Electronic Store specialist.

### Telephone or Direct Mail Orders

If You Are From ...	Call ...	Or Write ...
U.S.A.	DECdirect Phone: 800-DIGITAL (800-344-4825) FAX: (603) 884-5597	Digital Equipment Corporation P.O. Box CS2008 Nashua, New Hampshire 03061
Puerto Rico	Phone: (809) 781-0505 FAX: (809) 749-8377	Digital Equipment Caribbean, Inc. 3 Digital Plaza, 1st Street Suite 200 Metro Office Park San Juan, Puerto Rico 00920
Canada	Phone: 800-267-6215 FAX: (613) 592-1946	Digital Equipment of Canada Ltd. 100 Herzberg Road Kanata, Ontario, Canada K2K 2A6 Attn: DECdirect Sales
International	—	Local Digital subsidiary or approved distributor

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You can order documentation by electronic mail. Contact the following organizations for instructions:

## Related Documentation

### D.1 Ordering Information

If You Need . . .	Call . . .	Contact . . .
Software documentation <sup>1</sup>	DTN: 241-3023 (508) 874-3023	Software Supply Business Digital Equipment Corporation 1 Digital Drive Westminster, MA 01473
Hardware documentation	DTN: 234-4325 (508) 351-4325 FAX: (508) 351-4467	Publishing & Circulation Services NRO2-2/I5 444 Whitney Street Digital Equipment Corporation Northboro, MA 01532

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<sup>1</sup>Call to request an Internal Software Order Form (EN-01740-07).



## Glossary

### **Accelerator**

A key or sequence of keys that provides an alternative to using the mouse. You can perform all mouse actions from the keyboard, such as displaying menus and choosing menu items.

### **Active window**

The terminal window that is ready to accept input. This window displays the information you type (if the window accepts user input). Only one terminal window can be active at a time.

### **ANSI**

American National Standards Institute

### **ANSI keyboard**

Digital's standard keyboard, with a main keypad, editing keypad, numeric keypad, and top-row function keys. Compare to *Short ANSI keyboard*.

### **ASCII**

American Standard Code for Information Interchange. A set of 7- or 8-bit binary numbers representing the alphabet, punctuation, numerals, and other special symbols used in text representation and communications protocol.

### **Application**

A program that performs a specific task.



**Background process**

A process that does not require the total attention of the computer for operation. Background processing enables the operating system to execute more than one program or command at a time. As a general rule, all clients should run as background processes.

**Boot**

To bring a device or system to a defined state where it can operate on its own.

**CCITT**

Comite Consultatif International de Telegraphique et Telephonique (International Telegraph and Telephone Consultative Committee). A standards committee for the communication industry in Europe.

**Configuration manager**

A local client on VXT 2000 windowing terminals running server-based software that lets a VXT manager configure terminals or work groups of terminals so they share the same customized settings and font sets.

**Character set**

A group of graphic characters and control characters stored as a unit in the terminal. Graphic characters are characters you can display on the screen. Control characters perform special functions.

**Check buttons**

A group of square toggle buttons that provide different settings for an option. You choose one button from the group.

**Click**

To press and release a mouse button. The term comes from the fact that pressing and releasing the buttons of most mice makes a clicking sound.

**Client**

A program written specifically for X windows. Clients make their own windows and know how to resize and minimize themselves.

**Compose character**

A character produced by pressing two or three keys in sequence, starting with the Compose Character key or a diacritical mark key. You can use compose sequences to produce characters that do not appear as standard keys on your keyboard.

**Computer system**

A combination of system hardware, software, and external devices that performs operations and tasks.

**Configuration files**

Text files containing set-up and configuration information for X clients. A configuration file may be used for one particular client or for many clients.

**Cursor**

A blinking line or block on the screen that indicates the active position.

**DEC Multinational character set**

The default character set for the terminal. The DEC Multinational set is one of two 8-bit sets built into the terminal. The other set is ISO Latin-1. Both 8-bit sets include the standard ASCII character set and a supplemental set. For 7-bit environments, see *National replacement character sets*.

**DEC OSF/1 operating system**

Digital's implementation of the Open Software Foundation technology, with the Motif graphical user interface and programming environment.

**DECwindows Motif Window Manager**

The DECwindows Motif Window Manager is a program that controls the size, appearance, and location of windows and icons as well as how they receive input.

**Data processing keys**

Keys that have three or four characters on the top of their keycap. The characters on the right half of the keycap are data processing characters. To use data processing characters, you must choose the data processing version of your keyboard in the Customize Keyboard dialog box.

**DECconnect cabling**

Digital's cabling system for extending Ethernet and terminal interconnections into offices and work areas.

**DECnet software**

Digital's networking software that runs on nodes in both local and wide area networks.

**Default option**

A push button with a double outline, indicating the most frequently used setting for a window. You can choose a default option by pressing **Return** or clicking on the push button.

**Default setting**

A standard setting for one of the terminal's operating features, set at the factory. The terminal uses factory-default settings, unless you choose a new setting.

**Device icon**

An icon on the back of the system box that identifies the device that can be plugged into the connector.

**Diacritical marks**

Marks or symbols that indicate a change in the standard pronunciation of a letter. Examples of diacritics are acute accent ('), grave accent (`), and tilde (~). On the terminal, you can use diacritical marks (if available on your keyboard) to start two-stroke compose sequences.

**Double click**

To press and release a mouse button twice in rapid succession.

**Drag**

To press and hold down a mouse button while moving the mouse on the desktop and the pointer on the screen. Typically, dragging is used with menu selecting, and window moving and resizing.

**Ethernet**

A type of local area network, based on Carrier Sense Multiple Access with Collision Detection (CSMA/CD). A communication concept for local communication networks that use coaxial cable.

**Filter rectangle**

A bounded area used defined on the screen. To activate the filter, you define its coordinates with a control function. If the terminal detects that the locator is outside the filter rectangle, the terminal sends an outside rectangle event and disables the rectangle.



**Font**

A font is a set of character images in a particular typeface and style. For example, Times Roman bold is a font.

**Font path**

A logical file that lets a device access alternate character fonts for certain X window applications.

**Full-duplex modem**

A *modem* that can handle simultaneous, two-way communications.

**Graphics**

The use of lines, figures, shapes, and shaded areas to display information.

**Graphics tablet**

An optional device used to move the graphics input cursor on the screen and to enter data to an application program. Most tablets have three parts: a tablet, stylus, and puck. To move the cursor you move the puck or stylus across the tablet. Also known as a *locator device*.

**Group code**

A number that represents a host or group of hosts on a *LAT* network.

**Hardware**

The physical equipment—mechanical and electrical—that make up a system. Compare to *Software*.

**Hardware Ethernet address**

The unique Ethernet physical address associated with a particular Ethernet communications controller.

**Host system**

A computer system that has an active connection to your terminal. The primary or controlling computer in a multiple-computer network.

**Icon**

A small graphic representation of an object, usually an application. A window can be shrunk to an icon (or minimized) to save room on the workspace.

**InfoServer**

An InfoServer is a high-performance virtual disk server that can efficiently download the VXT system image software to many terminals.

**Internet**

A collection of networks that includes the ARPAnet, a number of local networks at universities and research institutions, and many military networks. See *TCP/IP*.

**IP address**

A unique network address that identifies a device on the TCP/IP network.

**ISO**

International Standards Organization. ISO Latin-1 is one of the two 8-bit multinational character sets built into the terminal. The other set is the *DEC Multinational* set. For 7-bit environments, see *National replacement character sets*.

**Kilobyte (KB)**

When referring to memory, 1024 bytes.

**LAT protocol**

A network protocol created by Digital for local area network communication.

**LAT address**

A network address that identifies the location of a device on the LAT network.

**LED**

Light-emitting diode. LEDs are used as indicators on the keyboard.

**Local area network (LAN)**

A high-speed communications network that covers a limited geographical area, such as a section of a building, an entire building, or a cluster of buildings.

**Locator device**

See *pointing device*.

**Local terminal**

A terminal from which the configuration manager is being used to manage other terminals and work groups.

**Matte**

An optional decorative border between the window frame and the work area.

**Maximize button**

A button that lets you increase the size of the window to its maximum allowable size. The maximize button is at the right edge of a window's title bar.

**Megabyte (MB)**

When referring to memory, 1024 kilobytes or 1,048,576 bytes.

**Menu bar**

The area below a window's title bar that lists the names of pull-down menus for the window's application.

**Minimize button**

A window button that lets you shrink a window to an icon. The minimize button is to the left of the maximize button.

**Mnemonic**

An underlined character in a menu. Mnemonics allow you to display menus and choose functions by typing letters on your keyboard.

**Modem**

**M**odulator - **d**emodulator. A device that converts data from a computer or terminal into signals that can be sent over a telephone line and back again.

**Modifier key**

A key pressed in combination with another key, to modify the code sent by that key. **Ctrl** is a modifier key.

**Monochrome monitor**

A video screen that displays images in shades of one color.

**Mouse**

A handheld pointing device used to select menu options and draw graphics. Moving the mouse across the desktop moves the pointer or mouse cursor on the screen. The mouse has three buttons that serve as function keys.



**National replacement character sets (NRCs)**

Seven-bit character sets for many Western European languages. Each set has 94 characters. NRC sets are similar to the ASCII set, except for a few characters.

**Network**

Two or more computers linked by communication lines to share information or resources.

**Node**

A computer, workstation, or peripheral device that is connected to a network and can communicate with other members of the network.

**Nonvolatile memory**

Random access memory (RAM) that does not lose its contents when you turn the terminal off. The terminal uses this memory to store your saved customize settings.

**OpenVMS operating system**

Digital's proprietary operating system.

**Pixel**

Picture elements. The smallest displayable unit on a video screen. To display a character, the terminal turns on a series of pixels.

**Pointer**

A graphic symbol indicating a screen position. You control the pointer location by moving the mouse. You can change the pointer shape; an application may also change the pointer's shape to indicate the type or state of an action.

**Port**

A means for connecting one device to another. Usually, each port has an associated connector.

**Prefix key**

A key that you press and release before pressing another key, to change the function of one or more keystrokes. Compose Character is a prefix key.

**Pull-down menu**

A menu accessed by pointing to the menu bar and pulling down with the mouse. Pull-down menus are generally organized by the types of functions they contain.

**Push button**

A control that causes an immediate action. To press a push button on the screen, point to it then click the select button.

**Radio buttons**

A group of option buttons that allow you to select only one of the selections at a time. Radio buttons may appear in a menu or in a program's window. Radio buttons are usually displayed as small diamond-shaped buttons.

**Random access memory (RAM)**

Memory that can be read from and written to. The terminal uses this memory to store instructions of programs currently being run.

**Read-only memory (ROM)**

Memory that can be read from, but not modified. The terminal uses ROM memory to store its operating code.

**Read-only terminal**

A terminal that cannot save new customized settings. It belongs to a work group that does not allow the saving of new settings.

**ReGIS software**

A serial geometric graphics display protocol created by Digital.

**Resize border**

The resize border surrounds a window and is divided into eight handles—one for each side, and one for each corner.

**Restore**

To change an icon back into its original window.

**Resource file**

In VXT software, the file that stores the customizations for a terminal or work group. Host-based terminals store their resource file in the terminal's nonvolatile memory. Server-based terminals store their resource file on an InfoServer system.

**Scroll bar**

A vertical or horizontal bar that lets you control what portion of a larger object is displayed within a window. The slider represents the relative position in the list. The size of the slider represents the relative portion of the list that is currently visible.

**Scrolling**

Moving information on the screen upward or downward to display more data.

**Select button**

The mouse button used for most operations, also known as mouse button 1 (MB1). By default, the select button is the left mouse button.

**Server**

Hardware or software that provides a specific set of services to a *client*.

**Service**

A name that represents a host or cluster of hosts that provides access to that host or cluster.

**Session**

An active connection between the terminal and the host system.

**Short ANSI keyboard**

A compact version of Digital's ANSI keyboard, for those who make little use of auxiliary editing and numeric keypads. An Extend key allows users to perform keypad keystrokes when needed.

**Sixel**

A vertical column of six *pixels*. Screen displays can be printed in the form of sixel graphics.

**Slider**

Part of a *scroll bar* that lets you scroll through information in a window. The size of the slider indicates how much of a file is currently displayed. The smaller the slider, the larger the file. The location of the slider in the scroll region indicates your relative position in the file.

**Software**

Programs that perform a chosen or required function. Compare to *Hardware*.



**Stepping arrow**

Part of a scroll bar that lets you move incrementally through information in a window.

**Submenu**

A menu associated with a menu item on a pull-down or pop-up menu. When you choose the menu item, you display the submenu.

**System**

A combination of hardware, software, and peripheral devices that perform specific processing operations.

**System image**

The VXT software, downloaded from a host system or server.

**System manager**

A person who performs tasks necessary to operate and maintain the system. See *VXT manager*.

**TCP/IP**

Transmission control protocol/Internet protocol. The standard wide area networking software for the ULTRIX and UNIX operating systems. TCP/IP is a set of protocols developed by researchers centered around the Advanced Research Projects Administration Network (ARPAnet).

**Terminal server**

An intelligent unit that can connect a number of asynchronous devices (terminals and printers) to a host system. For example, Digital's DECserver 200 can link eight terminals to a system in a local area network (LAN), using a high-speed Ethernet cable.

**Terminal window**

A window that emulates a video terminal. Terminal windows allow you to use applications that were designed for the video terminal they emulate.

**Terminator**

A connector used on one or both ends of an Ethernet segment that provides the 50-ohm termination resistance needed for the cable.

**ThinWire Ethernet network**

A term to describe Digital's 10base2 (IEEE standard 802.3 compliant) Ethernet products used for local distribution of data.

**Title bar**

An area at the top of the window frame that displays the name of the application and provides window management buttons.

**Toggle buttons**

See *Check buttons*.

**Transcript**

An area of memory that contains the last saved lines of your screen display.

**ULTRIX operating system**

A UNIX based operating system created by Digital.

**UNIX operating system**

An operating system created by AT&T and in wide use.

**Unregistered Terminals work group**

A work group supplied on a newly installed InfoServer, to let terminals operate until they are registered (created) in a work group you have created. The Unregistered Terminals work group is preconfigured with factory-default settings that are read-only.

**User-defined keys (UDKs)**

Keyboard keys that a user can define to perform specific functions.

**Visual character attribute**

A quality of a display character that highlights the character, such as bolding and underlining.

**VXT manager**

The person who manages the VXT system, work groups and the network. This person assigns unique node names and addresses for each terminal on the network, and provides administrative assistance to network users.

**Window**

An area on your monitor screen that represents all or part of an application.

**Window frame**

The resize border and title bar surrounding a window.

**Window manager**

The window manager controls the size, placement, and operation of windows in the workspace. The Motif Window Manager includes the window frames that surround each window object as well as the workspace menu. The Motif Window Manager is a client program of the X Window System.

**Window menu**

A menu that lets you control the size, shape, and position of a window. To display the menu, you use the *window menu button*.

**Window menu button**

The button at the left corner of a window's title bar. Clicking MB1 on the window menu button displays the window menu.

**Window system**

A windowing architecture that allows the execution and display of applications to be independent. Specific components of the architecture control the display of applications and determine how applications run. Since its introduction by MIT, the X Window System has become an industry standard.

**Work area**

The area in a window where you can perform user tasks.

**Work group**

A customization file and a set of terminals that share the file. Each work group is assigned to a particular support server.

**Workspace**

The monitor screen, where all windows are displayed.

**Workspace menu**

A pop-up menu with items for arranging windows and customizing the window manager. To display the workspace menu, point to anywhere in the workspace and click MB1 or MB3. You can also display the workspace menu from the window menu.



**XIE**




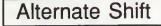






X image extension. An extension to the X core protocol that handles image functions. XIE enables compressed image data to be sent across the X wire and image processing to be handled at the X server.

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# Index

## A

---

- Accelerator keys, 21
- Additional characters, 248 to 258
  - canceling a sequence, 252
  - hexadecimal sequences, 252
  - invalid sequences, 251
  - table, 254
- Address
  - Ethernet, 214
- Adjust Video Centering (TM)
  - VX227 terminal, 107
- Adjust Video Rotation (TM)
  - VX227 terminal, 107
- Allow All Connections button
  - VXT EX, 219
-  key, 67
-   key, 168
-  key (German), 224
-  key (PC), 236
-  key (PC), 236
  - North American model, 236
-   keys, 164
-   keys, 165
- ANSI keyboard, 221 to 229
- Answerback message
  - sending, 226
- Answerback Message box (DECterm), 163
- Any Host button (TM), 35
- Any Host Indirect button (TM), 36
- Application Cursor Keys button (DECterm), 161
- Application Keypad button (DECterm), 161
- Applications
  - moving between, 14
  - starting
    - overview, 31
- Apply button, 85
  - VXT DECterm options, 149
- Arrow keys, 224
  - function, 161
  - PC keyboard, 237
  - short ANSI keyboard, 232
  - to move pointer, 21
- Audible indicators, 228
  - ANSI keyboard, 234
  - PC keyboard, 238
- Authorizing hosts
  - TCP/IP, LAT, or DECnet connections, 94
- Authorizing users, 93
- Auto print mode
  - selecting, 225
- Auto Print Mode button (DECterm), 168
- Auto Repeat button (DECterm), 164
- Auto Repeat button (TM), 88
- Auto Resize Terminal button (DECterm), 153
- Auto Resize Window button (DECterm), 153
- Autostart feature
  - Customize AutoStart dialog box (TM), 103
- AutoStart feature, 41
  - entering settings, 103
- Auto Wrap button (DECterm), 158

## B

---

- Backarrow key (PC), 236
- Background
  - for text display (DECterm), 158
- Background color (WM), 70
- Backing Store button (DECterm), 166
- Backing Store button (TM), 134
- <X> Backspace button (DECterm), 165
- ← Backspace key (PC), 236
- Batch Scroll Lines box (DECterm), 159
- Baud rate
  - serial communication, 115
- Bell, 228, 229, 238
- Bell volume, 87
- Big Font button (DECterm), 154
- BIND name servers, 121
- 8-Bit Multinational Characters button (DECterm), 162
- 7-Bit NRC Characters button (DECterm), 162
- 7-Bit NRCS Selection Options dialog box (DECterm), 165
- Booting the terminal, 135 to 146
  - BOOT commands, 144
  - Customize Boot dialog box (TM), 141
  - error codes, 265
  - from a remote node, 144
  - MOP trigger, 144
  - primary boot file, 143
  - reboot commands, 136
  - secondary boot file, 144
  - using the XIE option, 144
  - VXT software
    - from VXT EX Options dialog box, 220
- Bootstrap history
  - clearing, 266
- Border color settings
  - window manager, 69 to 70
- Border settings
  - window manager, 67 to 68

## Break key

See **F5** key

Browser color model, 276

## C

---

- Cancel button, 65, 85
  - VXT DECterm options, 149
- Cancel Printing (DECterm), 60
- Caps Lock** key (PC), 236
- Center Image button (TM), 93
- Character format
  - serial communication, 115
- Character sets
  - overview, 9
  - typing additional characters, 249
  - VXT 3270 window
    - translation table, 201
  - VXT DECterm window
    - 7-bit NRC sets, 165
    - choosing a multinational set, 161
    - selecting 8-bit or 7-bit, 162
- Check button
  - defined, 24
- Clear Communications menu item (DECterm), 57
- Clear Display menu item (DECterm), 57
- Clear Lines Off Top menu item (DECterm), 57
- Clicking
  - defined, 11
- Clientless VXT software, 4, 216
- Close button (WM)
  - using, 19
- Color
  - customizable features, 269
  - eyedropper, 272
  - interpolator, 272
  - mixing colors, 269
  - monitor setting, 135
  - paint buckets, 272
  - printing, 93
  - smearing colors, 272
  - tiles, 272



- Color map entries, 166
- Color mixing
  - scratch pad, 277
- Color Mixing dialog box, 270
- Color models, 270
  - browser, 276
  - grayscale, 277
  - HLS, 273
  - picker, 270
  - RGB, 275
- Color systems
  - customizing window colors, 70
- Comma key, 165
- Commands menu (DECTerm), 57
- Communication
  - See also* Serial communication
  - breaking serial, 226
  - network problems, 265
  - serial and parallel ports, 113
  - Compose Character key (ANSI), 224, 250
- Compose sequences, 250
- Composing characters
  - See* Additional characters
- Conceal Answerback Message button (DECTerm), 163
- Condensed font setting (DECTerm), 153
- Configuration manager
  - customizing the terminal, 8
  - identifying terminals, 103
- Confirm Close Terminal Manager button (TM), 102
- Confirm Reset Session button (TM), 101
- Connections Allowed button (TM), 94
- Copying text
  - disabled by some applications, 56
  - extending selected text, 56, 182
  - host synchronization, 54
  - selecting text
    - VXT 3270 window, 180
    - VXT DECTerm window, 55
  - using the keyboard only, 182
  - VXT 3270 window, 180
  - VXT DECTerm window, 54
- Copy menu item
  - VXT 3270 window, 180
  - VXT DECTerm window, 54
- Create menu (TM), 31, 39
- Creating applications, 31 to 45
- Creating local clients, 31 to 45
- Creating sessions, 31 to 45
  - Getting Started menu, 49
  - problems, 263
- Ctrl key (ANSI), 223
- Ctrl key (PC), 236
- Cursor
  - blinking or steady, 158
  - block or underline, 159
  - text, 158
  - VXT 3270 window, 177
- Cursor Blink button (DECTerm), 158
- Cursor Blink button (TM), 87
- Cursor keypad mode (PC), 238
- Customer service
  - See* Service
- Customized settings
  - DECwindows Customize utility, 9
    - from a host system, 9
  - overview, 7
  - problems
    - cannot change settings, 263
  - resource file, 7
  - terminal manager, 83, 110
  - VXT 3270 windows, 188
  - VXT DECTerm windows, 147
  - window manager, 62
- Customize menu (message box), 107
- Customize menu (TM), 84, 111
  - AutoStart settings, 103
  - basic settings, 83 to 107
  - configuration management, 128
  - Configuration submenu, 129
  - Customize AutoStart dialog box, 103
  - Customize Boot dialog box, 135, 141
  - Customize DECnet dialog box, 125
  - Customize DECnet Name Translator dialog box, 127
  - Customize Font Path dialog box, 130
  - Customize Keyboard dialog box, 85

## Customize menu (TM) (cont'd)

- Customize Language dialog box, 88
- Customize LASTport dialog box, 119
- Customize LAT dialog box, 117
- Customize Pointer dialog box, 89
- Customize Print Screen dialog box, 91
- Customize Screen Background dialog box, 96
- Customize Security dialog box, 93
- Customize Serial and Parallel Ports dialog box, 113
- Customize TCP/IP dialog box, 120
- Customize TCP/IP Name Server dialog box, 122
- Customize TCP/IP Routing Tables dialog box, 123
- Customize Terminal Manager dialog box, 100
- Customize Window Color dialog box
  - color, 99
  - monochrome, 98
- Customize X Server dialog box, 134
- DECnet Name Translator settings, 127
- DECnet settings, 125
  - display language, 88
  - font path, 129
  - keyboard settings, 85
  - LASTport group code settings, 118
  - LAT settings, 116
  - parallel port settings, 113
  - pointer and mouse settings, 89
  - saving the Terminal Manager window, 107
  - screen background settings, 96
  - security settings, 93
  - serial port settings, 113
  - system settings, 110 to 146
  - TCP/IP Name Server settings, 121
  - TCP/IP routing table settings, 123
  - TCP/IP settings, 120
  - video alignment, 106
  - video alignment dialog box, 106
  - window color settings, 98
- X server, 133

- Customize Message Box (TM), 109
- Customize Message dialog box (TM), 108

## D

---

- Data processing keys, 87, 227
- DECnet/SNA Gateway, 170
- DECnet address, 33
  - checking, 214
  - entering, 126
- DECnet terminal window
  - AutoStart, 103
  - ending, 44
- DECnet transport
  - Customize DECnet dialog box (TM), 125
  - Customize DECnet Name Translator dialog box (TM), 127
  - enabling, 126
  - entering a host name or DECnet address, 33
  - name translator address
    - primary, 128
    - secondary, 128
  - Name Translator settings, 127
  - network buffer size
    - entering, 127
  - security, 93, 95
  - settings, 125
  - terminal's DECnet address, 29
- DECnet X session
  - AutoStart, 103
  - ending, 44
- DEC OSF/1 AXP system
  - print command, 48
  - quitting a remote session manager, 44
  - TCP/IP Name Server settings, 121
  - TCP/IP printer port setup, 115
  - TCP/IP routing table settings, 123
  - TCP/IP settings, 120
- DECterm window
  - customizing, 8
- DECterm windows
  - See* VXT DECterm windows

- DECwindows
  - keyboard setting, 87
  - overview, 7
- Default button, 65
- Default Message Box Window (TM), 109
- Default options
  - choosing, 25
- Default Terminal Manager Window (TM), 107
- ⌘ Delete button (DECterm), 165
- ⌘ delete key, 165
- ⌘ delete key (ANSI), 223
- Determine IP Address (TM), 121
- Diacritical keys, 249
- Diagnostic messages
  - VXT Message Box, 30
- Dialog boxes
  - description, 23
  - making changes, 25
  - options menus, 23
- Digital manuals
  - See Related documentation*
- Dimmed items, 25
- Disable F3 Key (TM), 102
- Display Cursor button (DECterm), 158
- Display Options dialog box (DECterm), 157
- Display Scaling (TM), 134
- Dithering, 93
- Documentation, 284
  - online, 4, 50
  - ordering, 285
- Double clicking
  - defined, 11
- Dragging
  - See also Pointer shapes*
  - defined, 11
- Dynamic Routing button (TM), 124

## E

- EBCDIC translation table, 201
- Echoing data, 161
- Editing
  - VXT 3270 window, 179

- Editing keypad, 224
- Edit menu
  - VXT 3270 window
    - format, 180
    - Select All, 180
  - VXT DECterm window
    - format, 54
    - Select All, 55
- Ending a session, 43
- Enet address, 214
- Enter Connection Parameters dialog box (3270), 172
- Enter** key (ANSI), 225
- Enter** key (PC), 236
- Error codes
  - booting, 265
- Error messages, 265
  - See Diagnostic messages*
  - displaying, 109
- Errors
  - Ethernet, 209
  - LASTport protocol, 209
  - LAT protocol, 206
- Escape key, 164
- ESC character, 164
- Esc** key (PC), 236
- Ethernet
  - displaying errors and counters, 209
- Ethernet address, 214
  - hardware address, 29
  - when using DECnet, 29
- Ethernet Counters dialog box (TM), 206, 208
- Ethernet problems, 265
- Extend** key (short ANSI), 230, 231
- Ext key
  - location, 185

## F

- F1** (Hold) key (ANSI), 225
- F2** (Print) key (ANSI), 225
- F3** key
  - hiding the Terminal Manager window, 102



**F5** (Break) key, 163  
**F5** (Break) key (ANSI), 226  
Factory-default settings  
    restoring, 266  
File menu (DECterm), 61  
Finish Printing (DECterm), 60  
Font  
    Customize Font Path dialog box (TM), 130  
    font path settings, 129 to 133  
    for VXT DECterm windows, 154  
    scaling the display of, 134  
Font path, 131  
    checking, 214  
    node name, 131  
    process, 133  
    removing, 132  
    scroll box, 130  
    transport, 131  
Foreground color (WM), 70  
Form Feed Terminator button (DECterm), 167  
Function keys, 223, 225, 232  
Functions list  
    window manager, 77 to 82

## G

General Options dialog box (DECterm), 159  
German Standard Font button (DECterm), 154  
Getting Started menu  
    figure, 49  
Getting Started menu (TM), 49  
Graphics Options dialog box (DECterm), 166  
Graphics printing button (DECterm), 168  
Gray scale  
    monitor setting, 135  
    printing, 93  
Grayscale color model, 277  
Group code  
    entering, 118  
**Group Shift** key (German), 224, 251

## H

Hexadecimal key sequences, 252  
Hiding  
    Terminal Manager window, 102  
    VXT Message box, 102  
HLS color model, 273  
Hold key  
    See **F1** key  
Horizontal Cursor Coupling button (DECterm), 158  
Horizontal Scroll Bar button (DECterm), 158  
Host-based software, 3  
    font path  
        checking, 214  
        monitoring memory usage, 6  
Host-based terminals  
    loading VXT software, 137  
Host-based window manager, 101  
Host Preconfigured button (TM), 143  
Host status line, 158  
HP-UX operating system  
    IP X session, 35  
    print command, 48

## I

IBM AIX operating system  
    print command, 48  
Icon box  
    saving the size and location of, 71  
Icon color settings  
    window manager, 72 to 73  
Icon Name button (DECterm), 154  
Icons, 16  
    customizing colors of, 73  
    displaying the icon box, 71  
    labels and images, 72  
    location of, 71  
    making a window active, 67  
    rearranging, 17  
    restoring, 134, 166  
    restoring windows, 18

## Icons (cont'd)

- size, 71
- stacking, 20

## Icons (DECterm)

- selecting icon names, 154

## Icon settings

- window manager, 70 to 72

## Image accelerator board

- functions, 280

## Indicator lights, 228

## InfoReader

- accessing, 50

## InfoReader library, 4

## InfoReader Library dialog box, 50

## InfoServer system, 3

- defined, 3
- LASTport group codes, 118

## Input focus

- giving a window, 14

## IP address, 34, 120

- checking, 214
- domain name, 123
- entering, 121
- entering an indirect address, 36
- formats, 35
- primary name server, 122
- reading from a host, 121
- secondary name server, 122

## IP subnet mask

- entering, 121

## IP transport

- for loading VXT software, 137

## IP X session

- AutoStart, 103
- host list for subnets, 36
- limit, 34
- quitting, 44

## J

---

## Janus-faced keys, 237

## K

---

## # £ key (short ANSI), 233

## Key bindings, 76

## Keyboard

- See also* ANSI keyboard, Short ANSI keyboard, PC keyboard

## ANSI keyboard, 222

- auto repeat feature, 164
- Customize Keyboard dialog box (TM), 85
- editing keypad, 224
- indicator lights, 228
- local echo, 161
- main keypad, 222
  - function keys, 223
- numeric keypad, 225
- PC keycodes, 240 to 243
- problems, 264
- top-row function keys, 225
- warning bell, 164

## Keyboard dialect, 221

## Keyboard model

- setting, 86

## Keyboard Options dialog box (DECterm), 163

## Keyboard settings (TM), 85 to 88

## Keyboard type, 221

## Keyclick, 228, 229, 238

- volume slide bar, 87

## Keys

- repeating, 88

## L

---

## Language

- Customize Language dialog box (TM), 88
- display, 88
- keyboard, 86

## LA printers

- print settings for, 92

## LASTport group code

- entering, 119

- LASTport transport
  - Customize LASTport dialog box (TM), 119
  - displaying errors and counters, 209
  - font path, 131
  - group code settings, 118
- LAT Counters dialog box (TM), 206
- LAT terminal window
  - AutoStart, 103
  - creating, 44
- LAT transport
  - circuit timer, 117
  - Customize LAT dialog box (TM), 117
  - displaying errors and counters, 206
  - font path, 132
  - font paths, 131
  - keep alive timer, 118
  - printing from a host, 115
  - retransmit timer, 118
  - security, 93, 95
  - settings, 116
  - terminal's LAT address, 29
  - tuning performance, 116
  - VXT EX security, 219
- LAT X session
  - AutoStart, 103
  - ending, 44
- Launching
  - sessions and applications, 80
- Lights
  - See Indicator lights
- Listed Users Only button (TM), 94
- List Known Hosts button (TM), 36
- Little Font button (DECterm), 154
- Local applications
  - launching, 80
- Local clients
  - starting
    - overview, 31
- Local Echo button (DECterm), 161
- Lock key (ANSI), 223
- Lock key (short ANSI), 231
- Lock Key State (TM), 88

- Lock UDKs button (DECterm), 161
- Lock User Features button (DECterm), 161
- Lower button (WM)
  - using, 19
- lp command, 48
- lpr command, 48

## M

---

- Margin bell, 229, 238
- Margin Bell button (DECterm), 164
- Matte
  - customizing, 74
- Matte settings
  - window manager, 74 to 75
- Maximize button (WM)
  - using, 15
- MB3 pop-up menu (3270), 187
- Memory
  - clearing, 6
  - controller board, 5
  - memory modules, 5
  - monitoring the use of, 211
  - monitoring usage, 6
  - requirements, 5
  - size, 214
- Menu bindings, 76
  - changing or adding, 78
- Menus
  - displaying from the keyboard, 21
  - overview, 21
  - pop-up menus, 22
  - pull-down menu, 21
- Message Box, 30
  - AutoStart, 103
  - displaying, 109
- Message Box Customize menu
  - figure, 107
- Message region
  - scroll lines saved, 108
  - title, 109
- Messages
  - controlling displays, 107
  - displaying, 109
  - pause prompt box, 103



- Metric button(TM), 125
- Minimize button (WM)
  - using, 16
- Mnemonic, 21
- Modem Control buttons (TM), 116
- Modems
  - breaking communication, 226
- Modified ISO-Latin Character Set
  - figure, 201
- Monitor
  - color, 135
  - gray scale, 135
  - problems, 260
- MOP Boot File box (TM), 143
- MOP transport
  - for loading VXT software, 137
- MOP trigger
  - for rebooting the terminal, 144
- Motif window manager
  - AutoStart, 103
  - restarting, 40
- Mouse
  - See also* Using scroll bars
  - button layout, 90
  - buttons defined, 10
  - double click timeout, 91
  - figure, 11
  - pointer acceleration, 90
  - problems, 264
  - settings, 89
  - using, 10
  - using the editing keypad as a mouse, 224, 226
- Mouse button bindings, 76
- Move button (WM)
  - using, 18
- Multinational character sets, 161

## N

---

- Name server, 121
- National replacement character sets, 165
- Network
  - addresses, 29
  - monitoring network utilization, 211

- Network (cont'd)
  - problems, 265
  - status, 44
- Network buffer size
  - DECnet, 127
- Newline button (DECterm), 160
- No Form Feed button, 92
- Nonselectable items, 25
- Normal Cursor Keys button (DECterm), 161
- Normal font setting (DECterm), 153
- Normal Print Mode button (DECterm), 168
- Number generator mode (PC), 238
- Number of Bit Planes button (DECterm), 167
- Numeric keypad, 225
  - PC keyboard, 238
  - VXT 3270 window, 184
- Numeric Keypad button (DECterm), 161

## O

---

- OK button, 65, 85
  - VXT DECterm options, 149
- Online documentation, 4, 50
- OpenVMS operating system
  - DECnet Name Translator settings, 127
  - DECnet settings, 125
  - LAT settings, 116
  - print command, 49
- Options
  - ordering, 285
  - viewing installed options, 214
  - VXT DECterm window, 147 to 169
- Options button (TM), 219
- Option settings
  - VXT DECterm
    - recalling, 150
- Options menu (DECterm), 59, 148
  - 7-BIT NRCS Selection Options dialog box, 165
  - Display Options dialog box, 157 to 159
  - General Options dialog box, 159 to 163
  - Graphic Options dialog box, 166 to 167
  - Graphics Options dialog box, 166
  - Keyboard Options dialog box, 163 to 165
  - Printer Options dialog box, 167 to 169

- Options menu (DECterm) (cont'd)
  - saving and restoring settings, 149
  - Window Options dialog box, 151 to 156
- Options menus, 23
- Options submenu (WM), 62 to 82
  - border colors, 69
  - border settings, 67
  - icon, 70
  - icon color, 72
  - list of window manager functions, 77
  - matte, 74
  - resource configuration, 75
  - Workspace: Border Color Options dialog box, 69
  - Workspace: Border Options dialog box, 67
  - Workspace: Customize Resource dialog box, 76
  - Workspace: Icon Color Options dialog box, 72
  - Workspace: Icon Options dialog box, 70
  - Workspace: Matte Options dialog box, 74
  - Workspace: Options dialog box, 65
- Output Color Mode buttons (TM), 93

## P

---

- Pagefile, 213
- Parallel communication
  - settings, 113
- Parallel port
  - customizing, 113
  - for printing, 114
- Parity, 115
- Parity Check button (TM), 115
- Paste menu item
  - VXT 3270 window, 180
  - VXT DECterm window, 54
- Pasting text
  - host synchronization, 54
  - Quick Copy, 56, 181
  - remote DECterm windows, 56, 181
  - VXT 3270 window, 180, 181
  - VXT DECterm window, 54, 55
- Pausing a session, 41
  - resuming the session, 42
- PC keyboard, 234 to 243
  - editing keypad, 237
  - Janus-faced keys, defined, 237
  - main keypad, 235
  - models, 234
  - numeric keypad, 238
  - PC layout, 235
  - special-function keys, 236
- PF1** to **PF4** keys, 225
- PF keys (3270), 183
- Picker color model, 270
- ping
  - definition, 203
- Pointer
  - settings, 89
  - shapes, 12, 16
- Pointing
  - defined, 11
- Pop-up menus, 22
- Port number
  - specifying for Telnet, 35
- Port usage
  - serial or parallel, 114
- # £** pound key (ANSI), 227
- Power-up self-test, 265
- Preferred hosts
  - moving from Known Hosts dialog box, 37
- Preferred Services list, 39
- Pressing
  - defined, 11
- Print All Characters button (DECterm), 169
- Print All Text (DECterm), 60
- PRINT command, 49
- Printer controller mode, 168
- Printer Options dialog box (DECterm), 167
- Printer port
  - choosing serial or parallel, 114
- Printer Port button (TM), 115
- Printers, 46
  - baud rate, 115
  - problems, 264

Printer to Host button (DECterm), 168  
 Print Full Page + Transcript button  
     (DECterm), 169  
 Print Full Page button (DECterm), 169  
 Print Graphics (DECterm), 60  
 Printing, 45  
     canceling, 47  
     center image, 93  
     Customize Print Screen dialog box (TM),  
         91  
     dithering, 93  
     form feed character, 92  
     from a host system, 48  
         canceling, 49  
         HP-UX or SCO ODT, 48  
         OpenVMS, 49  
         ULTRIX, DEC OSF/1 AXP, SunOS, or  
         IBM AIX, 48  
     from a TCP/IP or LAT host, 115  
     from DECterm windows, 167 to 169  
     from the host system, 168  
     gray scale or color, 93  
     LAT print jobs  
         canceling, 47  
     output format, 92  
     pixel aspect ratio, 92  
     printer status, 47  
     Print Screen menu, 46  
     ribbon or toner saver, 93  
     rotated image, 93  
     TCP/IP print jobs  
         canceling, 47  
     the screen, 168  
     under host control, 168  
     VXT 3270 window, 180  
 [F2] (Print) key, 168  
 Print key  
     See [F2] key  
 Print menu (DECterm), 59  
 Print National Characters + Line Drawing  
     button (DECterm), 169  
 Print National Characters Only button  
     (DECterm), 169

Print screen settings, 91  
 Print Scroll Region Only button (DECterm),  
     169  
 Print Selected Text (DECterm), 60  
 Print Selection Only button (DECterm), 169  
 Print Text Page (DECterm), 60  
 Problems  
     See Solving problems  
 Pull-down menu  
     displaying, 21  
 Push button  
     defined, 25

## Q

---

Quick Copy, 56, 181  
 Quitting  
     a remote session manager, 45

## R

---

Radio button  
     defined, 24  
 Reboot menu item, 43  
 Reboot Options box (TM), 144  
 Record dialog box (3270)  
     figure, 183  
 Recording key sequences (3270), 183  
 Record Lines Off Top box (DECterm), 159  
 Record Lines Off Top button (DECterm), 157  
 ReGIS graphics, 166, 167  
     VXT DECterm window, 150  
 Related documentation, 284  
 Remote session managers, 44  
 Remote window manager, 101  
 Report Macrograph Contents button  
     (DECterm), 166  
 Reset button, 65  
 Reset menu item, 43  
 Reset Terminal menu item (DECterm), 58  
 Resize border  
     customizing, 68  
 Resize cursor, 16



- Resize Window menu item (DECterm), 57
- Resizing
  - VXT DECterm windows, 153
- Resource file, 7
- Resource settings
  - window manager, 75 to 82
- Restore button (WM)
  - using, 18
- Restore Message Box Window(TM), 109
- Restore Terminal Manager Window (TM), 107
- Restoring feature settings
  - terminal manager settings, 85
  - window manager settings, 64
- Restoring settings
  - VXT DECterm windows, 149
- Return key
  - selecting the function of, 160
- Return key (ANSI), 223
- RGB color model, 275
- Rotate/Scale Picture button (TM), 93
- Routes scroll box (TM), 125
- Rows and columns (DECterm), 153




## S

---

- Save Message Box Window(TM), 109
- Save Terminal Manager Window (TM), 107
- Saving feature settings
  - terminal manager settings, 85
  - window manager settings, 64
- Saving settings
  - VXT DECterm windows, 149
- Scale
  - defined, 24
- SCO ODT operating system
  - print command, 48
- Scratch pad, for color, 277
- Screen
  - Customize Screen Background dialog box (TM), 96
- Screen background, 97
- Screen color (TM), 96



- Screen Saver button (TM), 97
- Screen settings (TM), 96
- Scroll bar, 26
  - Scrolling methods, 26
  - Scroll region, 26
- Scrolling
  - preventing, 164
- Secondary Boot button (TM), 144
- Security
  - Customize Security dialog box (TM), 93
  - LAT X session, 45
- Security settings, 93
  - adding authorized users, 95
  - authorizing TCP/IP, LAT, or DECnet connections, 94
  - removing authorized users, 95
  - VXT EX, 219
- Select All menu item
  - VXT 3270 window, 180
  - VXT DECterm window, 54
- Serial communication
  - baud rate, 115
  - settings, 113
- Serial port
  - customizing, 113
  - for printing, 114
- Serial terminal window
  - AutoStart, 103
  - ending, 44
- Server-based software, 4
  - font path
    - checking, 214
    - pagefile, 213
- Server-based terminals
  - loading VXT software, 138
- Service, 267 to 268
- Session
  - AutoStart, 41
  - AutoStart settings, 103
  - creating
    - Create submenus, 39
    - VXT Create pop-up menu, 39
  - ending, 43
  - help on creating, 49
  - opening

## Session

- opening (cont'd)
  - overview, 31
  - pausing, 41
  - quitting from a remote session manager, 45
  - using preferred services, 39
- Session menu (TM), 40, 41, 43
  - Status submenu, 203
- Session Status menu (TM)
  - TCP/IP Network Test (ping) dialog box, 203
  - TCP/IP Routes dialog box, 205
- Setup
  - See Customize menu, Options submenu
- Setup Key (VXT EX), 219
- Shadow colors (TM), 99
- Shadow colors (WM), 70
- Share Color Map Entries button (DECterm), 166
- Shift clicking
  - defined, 11
-  key (ANSI), 223
-  key (short ANSI), 232
-  key (PC), 236
- Short ANSI keyboard, 229 to 234
  - arrow keys, 232
  - extended ANSI layout, 230
  - layout, 229
  - main keypad, 230
  - predefined keys, 232
  - special-function keys, 231
  - top-row function keys, 232
  - user-defined keys, 233
- Shutdown menu item, 43
- Sixel graphics, 167
  - VXT DECterm window, 150
- Size button (WM)
  - using, 18
- Slider
  - in scroll bar, 26
- Solving problems, 259
- Startup State (TM), 102

- Status Display button (DECterm), 158
- Status indicators (VXT 3270), 178
- Status line, 158
- Status submenu (TM), 203
  - Ethernet Counters dialog box, 206
  - figure, 203
  - LAT Counters dialog box, 206
  - System Configuration dialog box, 212
  - System Monitor dialog box, 211
  - using, 202 to 215
- Status update frequency
  - seconds, 103
- Stepping arrow, 26
- SunOS operating system
  - print command, 48
- System box
  - problems, 259
- System Configuration dialog box (TM), 212
- System Defaults button, 85
- System-default settings
  - VXT DECterm
    - recalling, 150
- System Monitor dialog box (TM), 211

## T

-  key (ANSI), 223
-  key (PC), 236
- TCP/IP Network Test (ping) dialog box (TM), 203, 204
- TCP/IP Routes dialog box (TM), 205
- TCP/IP transport
  - Customize TCP/IP dialog box (TM), 120
  - Customize TCP/IP Name Server dialog box (TM), 122
  - Customize TCP/IP Routing Tables dialog box (TM), 123
  - enabling, 120
  - entering a host name or IP address, 34
  - entering an indirect host name or IP address, 36
  - Name Server settings, 121
  - printing from a host, 115
  - routing table settings, 123
  - security, 93, 95

## TCP/IP transport (cont'd)

- terminal's IP address, 29
- terminal settings, 120
- VXT EX security, 219

## Telnet terminal window

- AutoStart, 103
- ending, 44

## Terminal

- LASTport group codes, 118
- network addresses, 29
- overview, 1 to 9
- problems, 261
- resource file name, 215
- status, 44
- system configuration, 212
- TCP/IP address, 120

## Terminal address, 214

## Terminal ID button (DECterm), 162

## Terminal Manager window, 28 to 51

- AutoStart, 103
- closing, 30
- controlling display of, 102
- Create dialog box, 31
- Create menu, 31
- Customize menu, 83, 110
- customizing, 7
- features, 29
- figure, 29
- Getting Started menu, 49
- hiding, 102
- icon, 102
- option settings
  - saving and recalling, 85
- Print Screen menu, 46
- saving the size and position of, 107
- Session menu, 40, 41
- using, 28 to 51

## Terminal Size box (DECterm), 153

## Terminal Tag (TM), 103

## Terminal window

- on the serial port
  - AutoStart, 103

## Test

- power-up self-test, 265

## Text-entry boxes

- typing in, 24

## TFTP

- font path, 132

## Tilde key, 164

## Title bar

- moving a window with, 15

## Translation table, 201

## Troubleshooting

- boot error codes, 265

## Troubleshooting problems, 259

## Typewriter keys, 87

# U

## ULTRIX operating system

- DECnet Name Translator settings, 127
- DECnet settings, 125
- print command, 48
- quitting a remote session manager, 44
- TCP/IP Name Server settings, 121
- TCP/IP printer port setup, 115
- TCP/IP routing table settings, 123
- TCP/IP settings, 120

## UNIX operating system

- quitting a remote session manager, 44
- TCP/IP Name Server settings, 121
- TCP/IP printer port setup, 115
- TCP/IP routing table settings, 123
- TCP/IP settings, 120

## UPSS DEC Supplemental button (DECterm), 161

## UPSS ISO Latin 1 Supplemental button (DECterm), 161

## User-defined keys, 226

- locking, 161
- Short ANSI keyboard, 233

## User-preferred settings, 83

## User-preferred supplemental sets, 161



## V

Vertical Cursor Coupling button (DECterm), 158

Vertical Scroll Bar button (DECterm), 157

Video alignment

    Customize video alignment dialog box (TM), 106

Video alignment settings

    VX227 terminal, 106 to 107

VRM17 monitor settings, 260

VT emulation mode (DECterm), 162

VX227 terminal

    video alignment controls, 106

VXT 2000 windowing terminal

    overview, 1 to 9

VXT 3270 window, 170 to 201

    Access Name, 173

    Application Name, 174

    Authorization Password, 174

    AutoStart, 103

    character set

        translation table, 201

    character sets, 9

    checklist, 171

    connection parameters, 186

    creating a session, 171

    cursor

        moving, 179

    customizing, 8, 188

    Data parameter, 174

    Define Key dialog box

        figure, 188

    display

        customizing, 191

    editing data, 179

    Edit menu, 180

    Enter Connection Parameters dialog box, 172

    entering data, 178

    exiting, 188

    field attributes, 186

    function list, 186

    Gateway, 173

VXT 3270 window (cont'd)

    keyboard functions, 192

    keyboard layout map, 185

    key functions, 195

    Logon Mode, 174

    numeric keypad

        entering numbers, 184

    overview, 170

    pop-up menu, 187

    printing, 180

    protected and unprotected fields, 177

    PU Name, 173, 174

    recording key sequences, 183

        canceling, 184

        playing back, 184

        viewing, 184

    Selector Mouse, 192

    Session Address, 174

    status indicators, 178

    Terminal Type, 175

    user-defined keys, 188

        deleting, 190

        saving and loading, 190

    VXT 3270 TE dialog box

        figure, 176

    Wait parameter, 175

    Window Options dialog box

        figure, 191

    work area, 176

        format, 177

VXT Create pop-up menu (WM), 39, 40

VXT DECterm window, 52 to 61

    answerback message, 163

    character sets, 9

    character set selection, 161, 162

    choosing a 7-bit NRC character set, 165

    clearing, resetting, or resizing, 57

    Commands menu, 57

    cursor, 159

    cursor key functions, 161

    customizing, 8

    display settings, 157 to 159

    Edit menu, 54

    exiting, 61

    font size, 154

## VXT DECterm window (cont'd)

- format, 52
- general settings, 159 to 163
- graphics settings, 166 to 167
- icon name, 154
- keyboard settings, 163 to 165
- locking UDKs, 161
- numeric keypad function, 161
- options, 147 to 169
  - saving and restoring, 150
  - saving and restoring settings, 149
- Options menu, 59, 148
- printer settings, 167 to 169
- printing, 59 to 60
- Print menu, 59
- problems, 264
- resizing, 153
- rows and columns, 153
- scroll lines, 159
- window settings, 151 to 156
- window title, 153

## VXT EX button (TM), 144

### VXT EX software

- loading, 217
- overview, 4
- security, 219
- specifying, 135
- switching to VXT software, 220
- using, 216

## VXT loader file (VXTLDR), 143

### VXT Message Box, 30

- closing, 30
- controlling display of, 102
- Customize menu
  - Customize Message dialog box, 108
- customizing, 107
- figure, 30
- hiding, 102
- icon, 102
- saving the size and position of, 109

### VXT software

- boot commands, 144
- booting
  - from VXT EX Options dialog box, 220

## VXT software (cont'd)

- loading
  - from an InfoServer system, 138
  - host-based operation, 137
- loading process, 136
- overview, 3
- restarting, 43
- specifying a version, 135
- version number, 213

## VXT Software button (TM), 144

## W

---

### Warning bell, 229, 238

- volume slide bar, 87

### Warning Bell button (DECterm), 164

### 3270 window

- customizing, 8

### Window borders

- customizing, 68

### Window colors (TM), 98

- color, 99
- monochrome, 98

### Window manager

- customizing, 7
- list of functions, 77
- option settings
  - saving and restoring, 64
- workspace settings, 65

### Window manager menu

- customizing colors, 70

### Window menu (WM)

- moving a window with, 18
- using, 15

### Window Options dialog box (DECterm), 152

### 3270 windows

- See* VXT 3270 windows

### Windows, 10 to 27

- See also* Pointer shapes

- action when removed, 67
- activating, 66, 67
- background color, 99
- changing input focus, 20
- changing the size of, 15
- closing with the window menu button, 68

## Windows (cont'd)

- customizing
    - colors, 70
  - defined, 12
  - foreground color, 100
  - highlight color, 100
  - lowering to the bottom of the stack, 17
  - moving, 14, 67
  - Options submenu, 62
  - popping to the top of the stack, 17
  - reducing to icons, 16
  - resizing, 18, 19
  - restacking, 20
  - restoring from icons, 18
  - saving window settings, 64
  - selecting, 14
  - settings
    - VXT DECterm windows, 151
  - shadow colors, 99
  - stacking, 17, 66
- ## Window size
- when moving or resizing, 67
- ## Window Title button (DECterm), 153
- ## Work group
- resource file name, 215
- ## Workspace: Border Color Options dialog box (WM), 69
- ## Workspace: Border Options dialog box (WM), 67
- ## Workspace: Customize Resource dialog box (WM), 76

- ## Workspace: Icon Color Options dialog box (WM), 72
- ## Workspace: Icon Options dialog box (WM), 70
- ## Workspace: Matte Options dialog box (WM), 74
- ## Workspace button (WM)
- using, 19
- ## Workspace settings
- window manager, 65 to 67
- ## Workspace submenu (WM), 19

## X

---

- ## X11 colors, 276
- ## X image extension (XIE) software, 279 to 283
- bitonal images, 280
  - enabling, 144
  - pipeline constraints, 281
  - pipeline examples, 282
  - pipelines, 280
- ## X Image Extension button (TM), 144
- ## XOFF signal, 116
- ## X server, 133 to 135
- checking for XIE capability, 280
  - Customize X Server dialog box (TM), 134
  - Monitor, 135
  - scaling the display, 134
- ## X Session Reset Server Action (TM), 135
- ## X Window System, 7





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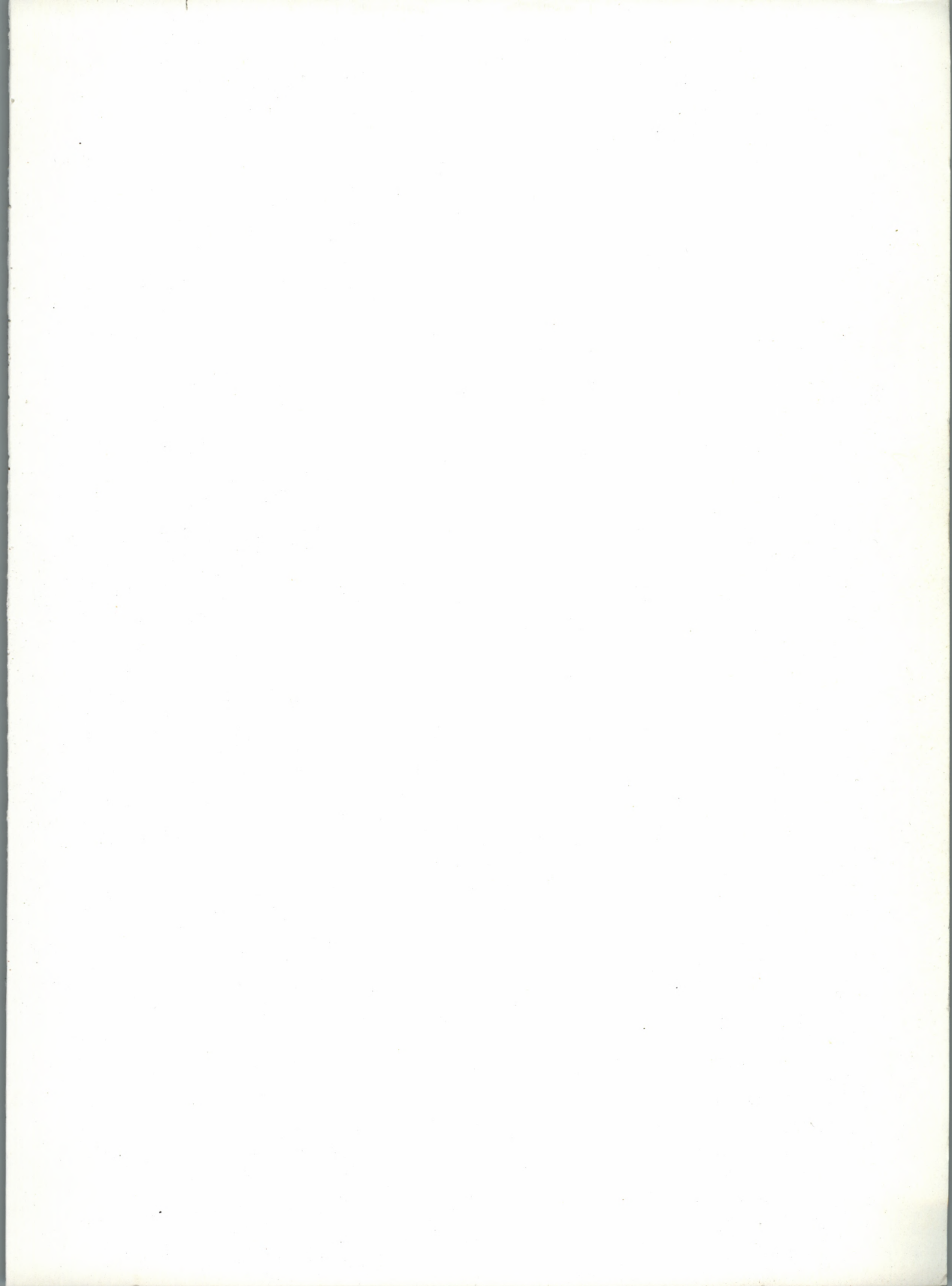


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